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To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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NAVAL PERSONNEL.

The statement is made in the report of Adm. Crowninshield, chief of the Navigation Bureau, that the present personnel of the navy would form barely one-fourth of the total establishment necessary to fight a first-class European power. It barely sufficed for the Spanish war, and no longer can be considered, the report says, as an effective nucleus about which a large establishment could be formed in case of war.

The admiral regards this need of the navy for officers and men as most urgent. Every bureau in the department is short of officers, and the service, the report predicts, soon will fall behind in the struggle, first for leaderships, and then for equality, with the other services. The disability of the sea-going corps of officers has greatly increased since the Spanish war, and many of the best officers are being lost as a result of breaking down from overwork.

The admiral severely criticises the ineffective effort of Congress at the last session to meet immediate needs for officers by authorizing the employment of retired officers, and he demands the immediate repeal of the act. He claims that the retired list, intended as a reward for faithful service, otherwise becomes a hardship and a punishment. The personnel act thus far has resulted in affording less officers than were on the active list before its passage, as, while authorizing an increase, it failed to provide the means therefor, so there are now 131 vacancies in the list of naval officers, when vacancies can be least afforded. Therefore, it is recommended for the next ten years that appointments to the naval academy be doubled, the President and Representatives in Congress appointing two instead of one wherever authorized now, and in addition Senators being given the same privilege of appointment as Representatives. The report says that England, which this year lays down fifteen war vessels, voted an increase of 4,250 officers and men to the naval establishment to man the ships, while Germany, which intends doubling her fleet in the next fifteen years, has provided in the same program for increasing the personnel by eighty-nine officers and 1,687 men each year until the total increase reaches 35,551.

It is declared that it is now impossible to man the vessels of our navy already constructed with the present force, not to mention those building or authorized. Congress is urged to make any increase in personnel immediately available.

There were 2,452 desertions from the navy and 86 deaths during the past fiscal year. The enlistments number 8,123, from a total number of applicants of 40,854. Over 68 per

cent. of the men in the navy are native born, 19 per cent. are naturalized and 9 per cent. have declared intentions. Ninety-two per cent. of the landsmen now under training are native born.

A NATIONAL NAVAL RESERVE.

Secretary Long, it is said in a special dispatch to the Tribune from Washington, will, in his annual report, urge the establishment of a national naval reserve to supplant the existing naval militia, which is thought to have outlived its usefulness, as shown by its rapid deterioration since the war with Spain. The proposed national reserve is already under consideration in Congress, with the indorsement of all naval and maritime interests. It contemplates the enrollment of officers and seamen in the merchant service, much after the manner of the British reserve, at an expense far below that of the naval militia, with the distinct advantage of making experienced seafaring men available for service aboard fighting ships. It will be shown that in case of war to-morrow the United States war ships now in service would require at least 500 officers and 10,000 men for fighting complements. With a national naval reserve enrolled this force could be secured and made efficient in a few weeks, while, on the other hand, the present naval militia system could not supply one-tenth the number in twice the time.

LONG VOYAGE WITH OIL AS FUEL.

The steamship Cowrie, of the Shell Transport & Trading Co., managed by Sir Marcus Samuel & Co., which recently discharged a cargo of oil in the Thames, steamed all the way from Koetei, in Borneo, to London, 9,250 miles—using nothing but liquid fuel; and the boilers for supplying the steam for the pumps which discharged the cargo are fired by the same material. The oil is not burned by a thin layer of incandescent coal, as is the case in some systems, but is pulverized or reduced to spray by means of a steam jet at the furnace door, where it is delivered from furnace tanks above the boilers. The Cowrie was formerly fired with coal, and her conversion to liquid fuel has been attended with advantageous results. Her complement of stokers has been reduced to six, as against sixteen necessary with coal, and her speed has at the same time been slightly improved. Moreover, the change has affected an important saving in bunker space, for her consumption of oil on this voyage was only 22 tons a day, where her daily consumption of coal used to be 35 tons, and a ton of oil is calculated to occupy only 34 cubic feet, against 45 feet required to coal. Oil, too, can be carried in the water-ballast tanks, and can also be taken on board much more quickly than coal—on a recent occasion 300 tons were pumped into a German steamer in one hour.

The oil yielded by the Borneo field forms an excellent fuel when used as it comes from the ground, and is said to be superseding both the Russian and the American product in the far East, where it is extensively used for fuel in steamers—e. g., the Hamburg-American boats engaged in the Eastern trade. To give some idea of its cost, it may be mentioned that, according to the terms of a recent contract, which need not be specified exactly, it is to be delivered at the price of 30 shillings a ton at Singapore and Hongkong, 32 shillings 6 pence (\$7.90) at Shanghai, 35 shillings (\$8.51) in Japan and Colombo, and 50 shillings (\$12.16) at Suez. The Cowrie brought from Borneo over 6,000 tons of solar oil, the greater part of which is destined to be used by the Gas Light & Coke Co. for the production of oil gas for enrichment purposes, and it is an interesting fact that the vessel (or one like her) will be bunkered with the refuse that remains after the oil has been utilized in this manner.

NAVAL GUNNERY.

"How in the world the gunners on our big battleships ever manage to land a shell within a mile of the thing they are shooting at has been a mystery to me ever since I saw a piece of heavy ordnance actually turned loose," said a man from California. "I was on the Oregon during some range tests off Mare Island, shortly after the ship was placed in commission," he continued, "and the executive officer, who was an old school-mate of mine, took me into the after turret to show me how the big guns were sighted. The man who does the aiming stands on a little platform at the rear of the breech and looks through a telescope fastened above the barrel. Two wires cross each other at right angles in the far end of the glass, and the place where they meet must be brought in line with a lance-shaped sight at the muzzle of the gun and also with the object aimed at, which in the case to which I refer was a canvas screen, 16 feet square 1,400 yards distant. Now, that would be hard enough to do on dry land, because every slight shift of the telescope meant the simultaneous shifting of several tons of cold steel by means of a complicated system of wheels and levers; but on board a moving ship, rocking up and down on the waves, the difficulties are something appalling.

"I squinted through the instrument, and all I could see was a circular patch of ocean whirling criss-cross over the field of vision, like a magic-lantern picture with a bad case of St. Vitus' dance. Once I caught a glimpse of something white, that shot across the circle as swiftly as a swallow and was gone before I could say boo! That was the target, on which the gunner was supposed to draw a bead! I stepped back in awe, while a good-looking young sailor-man took my place, gave a couple of hand-wheels a few sharp turns right and left, and then, all of a sudden, pressed something like a telegraph key. I thought the whole universe had broken loose at the foundation, but it was only the gun going off, and the shell carried away one entire end of the white canvas target. How the good-looking young sailor-man got his aim I don't pretend to say. It seemed like a piece of pure necromancy. The men behind the guns are, without a doubt, the greatest sleight-of-hand performers in the world. Herrmann simply isn't in it with them."

MANY experiments are being carried out abroad in the use of wireless telegraphy. France has fitted some of the Mediterranean squadron with outfits and trials have been carried out between the different ships and forts ashore. The results are reported as being very satisfactory. Russia has also obtained very satisfactory results in her navy. It has been used by the British in South Africa, where by the use of kites for the vertical wires, it is found possible to transmit messages over a distance of 85 miles. Some of the vessels of the channel (British) fleet have the apparatus installed on board, and it is the intention to give the system a severe test during the summer maneuvers. Germany has been experimenting with the Marconi system, and the North German Lloyds Co. are equipping their ships for its use.

It is reported that an agreement has been reached between the Navy Department and the Carnegie and Bethlehem Steel Co., which, while not perfected, will probably lead to a satisfactory adjustment of the controversy over the price of Krupp armor. Details of the arrangement practically made are withheld. It is understood that the Government has secured a satisfactory reduction in the price fixed by the armor companies.



DULUTH-SUPERIOR.

Special Correspondence to The Marine Record.

W. P. Wheelihan of Necedah, Wis., has sold 50,000,000 feet of pine in Lake county to Alger, Smith & Co. for \$200,000.

The Canadian steamer Arabian, which went ashore on Whitefish Point several days ago, was released and arrived at the "Soo."

A new corporation known as the Harlem Transportation Co., has been organized under the laws of Minnesota and will enroll the steamer Harlem at Duluth next season.

A special to the Pioneer Press from Bayfield, Wis., says: The fishing tug T. H. Camp, owned by A. Booth & Co., was sunk in Lake Superior, off the west coast of Madeline Island, on Friday last and is a total loss.

About 500 men are employed, and will probably keep busy all winter on the two new boats lately started at West Superior. The American Ship Building Co., has all its yards full for the winter. It has lately signed a contract for three new boats and one of them is likely to be built here.

The ore has commenced to freeze both in the cars and pockets at Two Harbors and steaming has been started. The movement from now on to the close of the season will be slow, and considerable delay to boats will be experienced. The tug Edna G. and road engines will be used to do the steaming.

There is no change in the ore freight situation. Some of the shippers are figuring on moving ore up to December 1, and if the weather is favorable a few wild boats will be wanted. A few medium sized cargos were offered at Duluth at 75 cents. At Marquette there has been some trouble with frozen ore and according to reports the ore was very hard to handle. Brokers are holding for \$1.

The Thompson Towing & Wrecking Association has filed a libel and attachment against the steamer T. S. Faxton in the United States court for work done in releasing the steamer when she went aground two years ago in the Soo river. The same company has also filed a libel against the steamer A. L. Hopkins, claiming her owners have refused to pay for the work of raising and repairing the steamer after she sunk in St. Mary's river two years ago.

According to one of the Duluth coal agents about 30,000 tons of coal have been received here since the strike. This is a small amount compared with the requirements, however, and the season is now so far advanced that there is little hope of relieving the shortage of anthracite except in a limited degree. The difficulty has been that a shortage existed in the East as well as in the West, and the coal men have been distributing it as fairly as possible according to the needs.

It is reported here that John D. Rockefeller has sold the whaleback fleet of 29 ships to his ore company, the Lake Superior consolidated mines. The boats have been laid up nearly all season, and as next season does not give much promise of much business for the whalebacks, the minority stockholders are complaining that the deal will hurt their stock. They think the boats are being loaded on to the consolidated mine because Rockefeller could not use them with profit himself. Rockefeller got possession of the whalebacks through foreclosure of a mortgage on the American Steel Barge Co.

The hearing of Fred Lee, engineer of the tug Castle, who is charged with refusing to act in his position because Walter Wood, mate of the same boat, was not a member of the Tugmen's Protective Association, was heard before the Local Steamboat Inspectors Monaghan and Chalk. The government of course recognizes no labor organizations and if Lee is found guilty of the offense charged his license may be revoked. The inspectors will probably not report their findings until late in the week. It is said that there is really nothing for the inspectors to adjudicate, engineer Lee can work if he wants to, or leave it alone. It is certain that government officials can't get mixed up in labor disputes or similar troubles. Mr. Lee stopped working and that is all there is to it.

The package freight boat lines at Duluth are blocked with eastbound freight and some of the agents are issuing rush notices to their patrons in the interior to shut off shipments to this point designed to go forward by boat. The package freight lines are working under embarrassing circumstances this fall. In previous years they have always shut off shipments from the interior in ample time in order that the contingency of having freight on hand to go forward after the season had closed would not be faced. The boats in previous seasons have always had the head of the lakes mills to depend upon for last cargoes, so that there was not the same anxiety to receive freight from the interior as late

as possible as exists now. There is only one head of the lakes flour mill in position to provide the boats on their last trips with cargoes. The Freeman will furnish perhaps 10,000 tons all told in November. In previous years there were four or five big mills to depend on and it made little difference to the boat lines even if they did happen to shut off shipments from the interior a little early. This year, however, there is the danger of shutting them off too early or not early enough to avoid having freight left over. The Duluth-Buffalo wheat rate has advanced to 2 cents and is firm at that figure. Many of the boats are on their last trips for the season. From now until Dec. 1 the grain shippers will forward as much of the wheat which is desired to send forward as possible. The insurance rate on wheat until Dec. 1 will continue at 40 cents on the \$100. Beginning Dec. 1 the insurance rate will be \$1 on the \$100, which is almost prohibitory.

DETROIT.

Special Correspondence to the Marine Record.

The D. & C. Line were all mixed on their schedule time this week on account of foggy weather.

A general increase is noted in shipments of package freight on account of the approaching close of navigation.

A bond of \$80,000 has been filed in the United States court by the Western Transit Co. in connection with the libel suit growing out of the collision which sunk the Minnesota Steamship Co.'s barge Martha.

The tow barge Martha has been raised and after discharging her iron ore cargo at Ashtabula will be sent to Lorain for final repairs. The Erie & Western liner Wilbur sunk her in a collision about three weeks ago.

Sandusky parties have closed a contract with the Craig Ship Building Co., of Toledo, for a passenger steamer to take the place of the steamer American Eagle on the Sandusky, Lakeside and Catawba Island route. She will be finished next spring and will cost \$50,000.

It is reported that the Sandusky people have closed a contract with the Craig Ship Building Co., of Toledo, for a passenger steamer to take the place of the American Eagle on the Sandusky, Lakeside & Catawba Island route. She will come out next spring and will cost \$35,000.

The barge Martha was brought down the river by the tugs Boynton and Smith, Wednesday. It is probable that the ore will be taken out of her and she will be taken to Lorain for repairs. The Anchor liner Conemaugh arrived here with a loose wheel. The schooner Maria Martin parted her anchor chains on Wednesday in the river and was blown ashore at the foot of Belle Island.

The wreck of the Martha having been removed from the 20-foot dredged channel, Lake St. Clair, Mich., information is hereby given that the Isle aux Peches lights will be lighted and maintained as usual on and after November 22, 1900, or as soon thereafter as the weather permits. By order of the Light-House Board. J. C. Wilson, Commander, U. S. N., Inspector 11th District.

The Minnesota Steamship Company and the American Steel Barge Company have filed their cross-libels in the suit brought by the American Steamship Company, owner of the Crescent City, for a collision which took place between that steamer and the barge Manila on August 9, 1899. The Manila was in tow of the Maricopa, and the barge had the collision with the Crescent City. The James B. Trevor was brought in as contributing to the collision, and thus the American Steel Barge Company which owned the Trevor at the time, becomes interested. The owners of the Manila charge the captain of the Crescent City with steering his boat to port, and thus striking the Manila. The owners of the Trevor also blame the Crescent City.

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A special from Quebec says: The first grain cargo brought over the Great Northern railway, the connection of the Parry Sound railway, was loaded here Saturday on the steamship Albanian bound for Liverpool. The grain came from Duluth to Parry Sound by water, and thence to Quebec by the Parry Sound and Great Northern lines. The opening of the road is expected to lead to a revival of Quebec's position as a shipping port. The loading of the Albanian was witnessed by a large number of guests, including several American capitalists, who are interested in the road. Among them were Colonel McNaught, New York; H. H. Melville, Boston; R. Abercrombe, Greenfield, Mass.; Joseph Barry, Niagara Falls, N. Y.; M. J. Curran, Lawrence, Mass.; W. A. Forbes, Greenfield, Mass.; D. Howe, Lawrence, Mass.; F. E. Kirby, Detroit; John Joyce, Boston; W. G. Packard, Greenfield, Mass.; A. C. Raymond, George S. Stockwell, Boston; Colonel S. B. Stoddard, Worcester; G. L. Stone, Boston; and Col. J. J. Whipple, Boston.

CHICAGO.

Special Correspondence to The Marine Record.

As expected, 2½ cents is now offered on wheat, several charters being effected at that figure, and it is likely to rule.

Owing to the practical suspension of navigation by reason of bad weather, vessels agents were not in shape to do much business. Rates were firm at 2c. on wheat charters.

Shipbuilding was never so active. Contracts are waiting to be placed but builders can't take hold of them. Several firms here want passenger boats yet. They find it impossible to contract for early delivery.

Sturgeon Bay canal is still closed to navigation on account of the sunken stone scow near the life-saving station. The work of removing the wreck has commenced, and it is expected the channel will be cleared in three or four days.

It is claimed by parties here that the whaleback fleet has not been transferred from the Bessemer Steamship Co. to the Lake Superior Consolidated Iron Mines by John D. Rockefeller, as the Duluth stockholders in the latter concern state. It is also said that the boats will still be managed from the office of the Bessemer Steamship Co. during the coming season.

The light-house officials have given notice that the light ships on Lansing shoal, White shoal and Gray's reef, at the Straits of Mackinac and Eleven-Foot shoal lightship in Green Bay will be taken in on or about Dec. 10. This will be about the time when nearly all craft are in port from their last voyages, and marine men appreciate the fact that these aids to navigation are to be left out so long.

The tug captains and engineers will celebrate the close of the season of navigation with a ball and supper, which will be given Dec. 19, under the auspices of the Licensed Tugmen's Protective Association, No. 2, of Chicago. The ball will be held in Medinah Temple. James E. Shay is in charge of the reception committee and Edward Comiskey of the floor committee, with Daniel Robertson, Albert C. Johnson and William Lynett as aids.

Secretary C. F. Fox of Chicago Yacht Club reports that he has received the Royal Canadian Yacht Club's challenge for a series of races in 1901 for the Canadian cup. The cup is now held by the Chicago Yacht Club and next year's contest will be sailed here. The yachts probably will be 35 footers again, as the Canadians state they are satisfied with the conditions which governed the 1899 races, and that size of yacht suits the Chicago Yacht Club.

Hull insurance will expire Dec. 5, at noon. By that time nearly all of the steamers engaged in the lumber trade will have gone into winter quarters. Grain rates, however, will attract the big boats as long as they hold on the present basis until navigation closes. The river now bears the appearance of the closing of the season. Schooners and tow barges coming in now are on their last trip, and they will either lay up here or proceed immediately to their home ports and go out of service.

Speaking of marine fire insurance, one of the agents here said: "There does not seem to be as much disposition to extend policies this season as has been the custom in recent years, especially last season, when renewals were numerous. The policies on A2 vessels expire Dec. 5, while some of the big steel boats enjoy about 5 days' grace, and there are a few that run until Dec. 15. The latter cases are very rare, however. After Dec. 5 the traffic on the lakes is handled almost entirely by craft that have been running all the season without insurance."

Owing to the fact that the hatches of the whaleback modeled steamer John B. Trevor were not in shape to be sealed by the Custom-House Inspector, Collector of Customs Nixon ordered that changes be made so that the law can be complied with. The Trevor was chartered to load a cargo of grain for Depot Harbor, Ont. Much trouble has been caused inspectors on several boats, owing to the difficulty of sealing up the hatches of boats bound for Canadian ports. Collector Nixon has ordered that no boat be cleared until all regulations have been complied with.

The small steamer Lady Jane, has just been delivered by the Marine Iron Works, Chicago, Ill., under her own steam to the Hand Lumber Co., Mobile Bay, Ala. She made the 2,000 mile trip from Chicago that was pleasing to all concerned, both from an enjoyable as well as economical and practical standpoint. The route being via the Chicago river and canal to the Illinois river, thence via Mississippi. Any who may contemplate making that very interesting trip, either all or part of the way, can secure information regarding it by addressing, Marine Iron Works, Station A, Chicago, Ill., though they have not as yet, we believe, printed any matter for distribution, pertaining to that very enjoyable route.

The Canadian-Atlantic steamer W. H. Gratwick collided with the east side of State street bridge Sunday, tearing away about twenty feet of the footpath and sidewalk. The Gratwick, which was heavily loaded and in tow of the tug Morford, had whistled for the bridge draw and kept up speed. The bridgetender had previously discovered that the north end of the structure had been set on fire by the electric light wires and had gone to the Dearborn street bridge, where there is a telephone, to notify the fire department. His absence was noted too late by the tug captain, who made every effort to check his tow, but the current in the river was too strong, as a result of the heavy north winds which have piled the water up at this end of the lake.

BUFFALO.

Special Correspondence to the Marine Record.

Superintendent of public works Partridge has issued an order closing the State canals for the season Saturday, Dec. 1st, at noon. The order contains the usual provision—"unless sooner closed by ice."

Arrangements whereby the steamer Georgetown, built at the Union dry docks will be completed at New York, prevented the vessel being thrown back on the builders' hands. John L. Crosthwaite, for whom the boat was built, insisted that she should be gotten to tide water in a finished state before the close of the of navigation.

Lumber and wreckage, supposed to be pieces of some boat's cabin, are reported as washing ashore at Port Colborne, but there is nothing to indicate what vessel it is from. It is thought it may be from the barges Nos. 3 and 4, which were abandoned by the tug Fischer off Long Point, about a week ago, after they had become waterlogged.

Capt Harry Richardson laid here this week awaiting orders to take the steel steamer Viking to the Atlantic coast but according to the last reports, the order will not be given. A year ago Capt. Richardson reached Kingston, Ont., with the Viking, en route to the Atlantic, when he was ordered to return. There was then as now, some hitch in the arrangement.

General Superintendent S. I. Kimball, of the Life-Saving Service, in his annual report, calls attention to the justice and necessity of an increase in the compensation of district superintendents, who he believes are the poorest paid servants of the government, considering the nature and extent of their duties and their heavy financial responsibility, and he makes a strong plea in their behalf.

The American Ship Building Co. has secured control of the Union Dry Dock Co's plant, including the two dry docks, shipyards, contracts, etc. The Union and Buffalo dry docks as now controlled by the American Ship Building Co., will be merged and will be known as the Union Ship Building Co. The transfer price was about \$1,000,000. It is understood that Mr. Edward Gaskin will be retained as superintendent.

A company of New York and Brooklyn capitalists, represented in this city by Martin C. Ebel, have made arrangements to run a line of boats between Buffalo and Dunkirk, and Buffalo and Port Dover, and Port Colborne during the Pan-American Exposition. Frequent trips will be made at low rates, and it is expected many people will be brought to and from the Exposition, and many persons will take the ride for pleasure.

A section of the Minnesota ore docks, situated on Blackwell canal, in the harbor, collapsed Sunday morning Nov. 18. There were 60,000 tons of ore on the dock at the time. Two boys were killed. The loss is estimated at \$150,000. Nearly all the ore on the dock was precipitated into the water. The ore is being recovered and the dock will be rebuilt. A quicksand foundation is at present supposed to be the cause of the collapse as the dock itself was in first-class condition.

The Canadian Pacific Railway authorities notified grain shippers on Tuesday at Toronto that the company would operate a service of steamships this winter from St. John, N. B. to Europe. The steamers will be those of the Elder Dempster line to Liverpool, the Donaldson line to Glasgow and the Head line to Dublin. In exporting circles it is said the Canadian Pacific Railway decision was hastened by the knowledge that the Intercolonial was preparing to take contracts on a large scale for shipment from St. John of stuff usually handled by the Canadian Pacific Railway.

At the meeting of the Executive Committee of the Canadian Manufacturers' Association, held at Toronto a few days ago, it was decided to co-operate with the Montreal Board of Trade in petitioning the government to appoint a Royal Commission to investigate the alleged excessive marine insurance rates charged against the St. Lawrence ports. It is felt that the rates of marine insurance are now discriminating very seriously against this great Canadian waterway. It was pointed out that an investigation would disclose whether this discrimination is due to the insurance companies or to the insufficient lighting by the government of the St. Lawrence route.

In furtherance of the canal campaign a mass-meeting of all Buffalo business men is called to be held on the floor of the Merchants' Exchange at noon next Saturday. A statement of the progress thus far made by the forces that are working for the barge canal and the supremacy of New York State's commerce will be made and the plans of campaign in which all the business community of Buffalo can assist, will be outlined at this gathering. It is announced that the canal improvement committee of the Merchants' Exchange and of the Business Men's Central Council have combined forces and will work together as one committee hereafter. The meeting of Saturday will be under the joint auspices of the two committees.

The following announcement is made by Mr. H. F. J. Porter of the headquarters staff of Bethlehem Steel Company at South Bethlehem, Pa. In the evening of Nov. 23rd and 27th he will address the classes of the Brooklyn Institute of Arts and Sciences, in the public lecture course, his subjects being "The Development of the Forging Industry" and "Modern Methods of Making Steel Forgings", respectively. On Nov. 24th the lecture last mentioned will be repeated before the

German Technical Society of Philadelphia, and on Saturday evening Dec. 8th, Mr. Porter will exhibit before the Winter Conversazione one of the Franklin Institute in that city turnings made by tool-steel treated by the "Taylor-White Process" which the Bethlehem Company is exploiting.

CLEVELAND.

Special Correspondence to The Marine Record.

Only six steamers of the Bessemer Steamship Co.'s big fleet are in commission.

The contractors are tearing away the old west pier and the former pier light is extinguished.

The Buffalo steamer City of Erie left forty-five minutes late Tuesday evening because of heavy freight business.

Capt. Geo. Simpson, compass adjuster, was in town this week for a few days. He is now stationed at Sault Ste. Marie and makes only occasional visits to this port.

Enough charters have been made at 50 cents to both the head of the lakes and Milwaukee to establish that as the ruling figure at which coal will be carried this week.

A large number of vessels are going into winter quarters at all ports so that any cargoes that want to be forwarded ex lake ought to be chartered for at an early date.

While the ore companies have not made any overtures to vessel owners for tonnage to use in 1901, it seems rather probable that the rate be in the neighborhood of 70 cents although this figure will only pay the largest carriers.

Official numbers and signal letters have been assigned to the steamer Asuncion, built at Lorain, Ohio, and hailing from Cleveland. Her tonnage is 2,196 gross and 1,328 net. Other smaller tonnage is also registered from lake ports.

There was considerable grumbling on Tuesday night because no Detroit boat was at the dock ready to leave for Detroit, a large number of passengers were seriously disappointed but the boats are not permitted to sail in thick, foggy weather, hence the delay.

It is now stated by an interested party that the vessels of the whaleback fleet were not sold by John D. Rockefeller to the Lake Superior consolidated iron mines, as stated in a dispatch sent out from Duluth last week. No transfer of the boats have been made and they will be operated by the Bessemer Steamship Co. again next season.

By getting application blanks from Capt. George P. McKay, sailors can get reduced railroad rates to their homes. The blanks given out by Capt. McKay are only good from Cleveland, but the men employed on the boats can get reduced rates at other Lake Erie ports by getting an order from the master they sailed with.

The regular monthly meeting of the Executive Board of the American Ship Building Co. was held here on Wednesday, but only routine business was transacted. Mr. L. M. Bowers, John D. Rockefeller's representative on the lakes, attended the meeting. Some of the officials of the company went to Buffalo last night to look over the property which was recently purchased.

Figures for the season, which are nearly closed, show that the shovelers on Andrew Carnegie's dock at Conneaut harbor have each received wages averaging \$96 per month during the entire season of navigation. There have been no strikes, and the men have been constantly at work. Nearly three hundred men are employed besides hoisters, engineers, yard men, and the office force.

The Cleveland & Buffalo Transit Co. is close to the end of its season. The announcement is now made that the last boat will leave here for Buffalo on the night of November 19, and the last boat will leave Buffalo for Cleveland on the following evening. Then the steamers will be put in winter quarters. The company also announces that the season is to be properly closed with a farewell excursion on Saturday evening to Niagara Falls and Buffalo, this being the end of one of the most successful excursion seasons in the history of the line.

There are a few wild cargoes of ore showing up now and then, and a cargo is said to have been placed recently at 75c. from Duluth. The owners are firm in the belief that if they had the boats and should demand it they could better that figure. Vesselmen are making a firm stand for \$1 on ore from the head of Lake Superior and the indications are that they will induce the shippers to pay that figure. There are not many wild cargoes on the market, but the shippers that wanted tonnage offered 90c. They did not get any boats and will probably pay the rate demanded by the vesselmen before the end of the week.

The schooner St. Lawrence, laden with 600 tons of coal from Cleveland to Amherstburg, went ashore just east of the government piers at Lorain on Wednesday morning and now lies on a sandy bottom, 600 feet from the beach, full of water. The rescue of the crew furnished a great deal of concern and people gathered on the beach to watch the work of rescue. Besides the captain, his wife, daughter and two sons, there were four seamen on the boat. The schooner was struck by a heavy squall when five miles off Kelley's Island, which tore away her mainsail and some of her jibs. The vessel was put about and headed for this port. In entering the harbor the tow-line parted and the schooner stranded before further assistance could be rendered.

FLOTSAM, JETSAM AND LAGAN.

It has always been the American Shipbuilder's aim to further the interest of all worthy objects and devices in the marine line that would be of benefit to our readers, and knowing as we do, of the many damages that have been wrought by the old method of towing—especially on coast, sound, and lake—we have carefully watched and noted the rapid strides, and the many flattering testimonials volunteered by the most prominent vessel owners on the Great Lakes, and in foreign waters, of the good results attained not only by the steam towing machine manufactured by the American Ship Windlass Co., but also of the Providence windlass and capstan, productions of the same company that have gained a world wide reputation.

Recent improvements to De Puy's paragon boiler place it more than ever to the fore. Its performance on the vessels in which it is installed make it unequalled for durability, simplicity and economy. In Buffalo, Riter Bros. & Co., at their boiler shops, are building two new De Puy marine boilers, each of 150 horse-power. The boilers will have the latest improvements, as planned by Capt. De Puy. The firm is figuring on building several 250 horse-power boilers for a new beet sugar works, also for a city water works supply company. The Paragon boiler has been practically tested in Erie canal and steamers, and has resulted in fuel bills being cut in two. The saving is due to unequalled heating surface and free circulation of water. If interested further particulars will be furnished by M. De Puy, patentee, of 19 South street, New York.

The Roberts Safety Water Tube Boiler Co., of New York City and Red Bank, N. J., have just paid their tenth annual dividend of 10 per cent—thus paying 100 per cent. on their investment to the original stockholders. This company is now building a 400 horse-power boiler for the steam yacht Admiral, two boilers of 500 horse-power each for one new vessel being constructed by the Craig Ship Building Co., of Toledo, and four similar boilers for another vessel, also their eighth boiler for the United States Revenue-Cutter Service, besides many other orders. The year 1900 was the best business year since the formation of the company, and prospective orders for 1901 make it appear that even the year 1900 will be eclipsed. The fourth extension of The Roberts Boiler Works is now being planned, after which they expect to turn out an average of about one boiler per day.

Some men were inventing stories to pass the time away. They all had a turn at it except an old sailor, who had remained silent all the time until pressed by the others to spin them a yarn. He began: "I was once in a dreadful storm. All the provisions were washed overboard, I was very ill and ate nothing for four days. At the end of that time I began to feel hungry and the steward gave me beef, chicken, port wine and eggs." "But you said all the provisions were washed overboard," said one of the men. "Where did the beef come from?" "From the bullocks (bulwarks)," said the old sailor. "And where did you get the chicken from?" "From the hatch." "And the port wine?" "From the port hole." "And the eggs?" "Eggs," said the sailor, "I didn't say eggs, did I?" "Oh, yes, you did," said the man. "We've caught you now." The old sailor thought he was caught and had to consider. At last he said: "Oh, yes, I did have eggs. The captain ordered the ship to lay to (two), and he gave me one.—Ex.

John B. Hardy has recently secured a 10-acre tract of land near Tacoma, Wash., and will at once erect a shipbuilding plant. The property bought by Hardy was formerly owned by the Pacific Naphtha Launch Co., and the buildings once used by that concern will be utilized. At the time that Mr. Hardy bought the machine works he also purchased a foundry at Ballard. The latter concern has never been operated since Mr. Hardy has owned it. Several thousand dollars' worth of valuable machinery, including a complete foundry plant, has been in the building at Ballard for more than a year. It is Mr. Hardy's intention to move the plant to Tacoma and run the foundry and machine works on the land just purchased. It has a water frontage of 2,000 ft. on the west bank of the river, with a channel depth at low tide of about 20 ft. A dock 50 ft. in length will be constructed, and in many ways the new location will be better suited for a machine works than the present site. Associated with Mr. Hardy in the new enterprise is John J. Hill, the shipbuilder of Marine City, Mich., who has been building wooden vessels for 40 years, and who is well-known on the lakes.

The New York Journal of Commerce declares that without waiting for the results of the Carnegie shipment of steel from Conneaut to Liverpool, fifteen steamers adapted to the same service are in process of construction. Twelve steamers of dimensions suitable to the Canadian canals and strong enough for ocean voyages, are already on the lakes, besides the four to leave Conneaut in November, which are not expected to return. Next spring there will be on the lakes twenty-seven steamers suitable for voyages between lake and European ports. Some, or all, of the new steamers will carry 3,600 tons in deep water and 2,400 on less than fourteen feet draft, but the four to sail in November will carry only 1,000 tons each through the canal, another 1,500 tons of cargo being put on board at Montreal. Of the fifteen new steamers the American Steel & Wire Co., is having four built, and it already has two steamers of the same class. Another four are building for a grain shipping firm in Chicago. Billets and sheet bars will make up the cargoes of the four steamers to sail this month, and the fact that a part of the cargo is to be unloaded at Cardiff and Swansea indicates that Welsh tin plate will be made from American steel.

UNITED STATES COMMERCE.

The report of Commissioner of Navigation Chamberlain, considers the past fiscal year the most prosperous period known to American shipping for some years. Returns for the current fiscal year promise an even more satisfactory record.

For the first time since the Civil War broke out the documented tonnage of the United States exceeds 5,000,000 gross tons. On June 30, 1900, American documented tonnage comprised 23,333 vessels of 5,164,839 gross tons, an increase of 300,000 tons over the previous fiscal year. Our maximum tonnage was 5,539,813 tons in 1861. (Our shipping was then larger than Great Britain's and nearly equaled the British Empire's. British shipping now amounts to 14,261,000 gross tons.)

American vessels are almost wholly confined to the coasting trade, which employed last year 4,338,145 tons, or more than the total tonnage of Germany and France. Our tonnage in the foreign trade was only 816,795 tons, and carried last year only 9 per cent. of our exports and imports. A century ago American shipping registered for foreign trade was 669,921 tons, while this tonnage now in the 13 original States amounts to 482,907 tons.

For serious competition with foreign nations in the ocean carrying trade we are practically restricted to 97 registered steamships over 1,000 tons, aggregating 260,325 tons. Single foreign steamship corporations own greater tonnage. Japan has 83 ocean steamships of over 2,000 tons, aggregating 286,000 tons. Besides these steamships we have 125 registered square-rigged sail vessels, over 1,000 tons each for deep-sea trade. More than half of these are over 20 years old, and as such vessels disappear their places are not supplied by new construction.

Our tonnage is distributed between the Atlantic and Gulf coasts, 2,727,892 gross tons; Great Lakes, 1,565,587 tons; Pacific coast, including Hawaii, 612,904 tons; Mississippi and tributary rivers, 258,456 tons. Our steam vessels amount to 2,657,797 tons; documented canal boats and barges to 622,000 tons; and the remainder, 1,884,842 tons, are sail vessels and schooner barges.

The increase in our shipping during the decade was 740,342 tons, of which 502,523 tons stand to the credit of the Great Lakes. The increase in ten years on the Pacific has been 184,512 tons, due mainly to Alaskan and Hawaiian trade, and on the Atlantic and Gulf coasts only 89,297 tons, while the tonnage on the Mississippi and tributaries has decreased 36,000 tons.

The report is chiefly devoted to the relations of the United States to the world's ocean carrying trade, and for this purpose changes in the world's shipping during the past ten years are examined in some detail. Since 1890 the world's steamships have increased from 12,985,000 gross tons to 22,369,000 gross tons, sail vessels have decreased from 9,106,000 tons to 6,674,000 tons, and the effective carrying power of the world's merchant fleets has increased 60 per cent.

The most notable change in the world's shipping has been in the size of the steamships. In 1890 there were 218 ocean steamships of 4,000 tons or over, while now 980 such steamships, aggregating 5,500,000 tons, constitute one-fourth of the world's steam tonnage.

Increased speed, though great, has been less noteworthy. Of the ocean steam tonnage of 1890, 13 per cent., 423 screw steamships, 1,650,000 tons, were of 12 knots or over. Of ocean steam tonnage in 1900, 24 per cent., 1,109 screw steamships of 5,230,000 tons are of 12 knots or over.

The hulls of 60 per cent. of the world's shipping are now made of steel, compared with only 20 per cent. in 1890. Steel has radically changed the industrial organization of the world's shipbuilding and shipowning. It requires expensive machinery, great capital and the employment of large numbers of specially trained mechanics, thus concentrating the world's shipbuilding. A list of 30 principal shipyards of the United States, Great Britain, Germany and France is given which build 60 per cent. of the steamships built in the world during a year, including war vessels, except those building in government yards.

Concentration of the world's shipowning has been as notable during the decade as the centralization of shipbuilding. A list is printed of the 30 principal steamship companies of the world which own 1,600 steamships of 5,616,000 gross tons (including some vessels now building,) or one-quarter in tonnage and more than one-quarter in carrying power of the world's ocean steamships. Of these only 9 of 81,000 tons, owned by the International Navigation Co., are American. Ocean carrying, through regular

passenger and freight lines, is being assimilated to the methods and conditions of trunk railroad transportation.

On the basis of the gross earnings reported by principal foreign steamship companies it is estimated that during 1899 the gross earnings of steam and sail vessels in the foreign carrying trade of all nations amounted to \$700,000,000.

The export trade of the United States requires about 20 per cent. of the world's seagoing tonnage in foreign trade, including the largest, fastest and most expensive steamships. The weight of exports by sea in 1899 was 24,000,000 tons, of 2,240 lbs. To carry these exports and passengers, including immigrants, requires steady employment throughout the year of about 1,200 steamships, aggregating 3,600,000 gross tons, and 1,300 sailing vessels of 1,000,000 tons. The number and tonnage of vessels actually engaged is, of course, larger, as obviously many vessels are engaged only part of the year in the trade of the United States.

The problem of ocean transportation at this time is essentially one of transportation by steel screw steamships. The purposes to which wooden fore and aft vessels and steel square-rigged vessels are adapted are important but restricted. The Suez canal reduced opportunities for sail vessels, and the Nicaragua canal will further reduce them.

In the past ten years Great Britain has built 4,638 steel steamships, of 9,793,000 tons, while the United States has built 465 steel steam vessels of 743,000 tons, of which 198 of 450,000 tons were built on the Great Lakes. Our entire construction for the decade is not much more than half of Great Britain's output of 1,340,000 tons during 1899. We have built for the foreign trade since 1890 only 24 steel steamships of 80,000 tons, and of this total 11 steamships of 58,000 tons were built as mail steamships under the postal subsidy acts. If the outlook for the building of steel steamships in the United States were not at present more promising than of late years legislation for the development of American shipping would probably prove futile.

On August 15, 1900, 68 merchant steel steam vessels aggregating 278,000 tons, and 47 naval vessels of 113,000 tons (displacement) were building or contracted for. Contracts since that date (some since the election not included in the report) bring the merchant total up to 350,000 tons, including about 100,000 tons on the lakes. Congress has authorized 179,800 tons (displacement) of naval vessels, not yet contracted for. Part of the merchant construction will not be completed in two years or more, but the current year will record much the largest amount of steel shipbuilding in our history.

The coasting law and its recent extensions, our heavy expenditures for naval construction, and the building of vessels to replace those bought for transports and the postal subsidy law have given steel shipbuilding its recent stimulus. In the United States the conditions have now been established, abundance of capital, cheap materials, practical experience, constructive talent and skilled labor, which, if brought together by a demand for American vessels, created by legislation, guarantee the country's future as a maritime commercial power.

Mr. Chamberlain reviews in some detail the bills reported to the Senate and House of Representatives, known as the subsidy bills, with illustrations of the difference in cost of building and operating American and British steamships at the present time. It is shown that the subsidies proposed generally equalize those differences.

A freight steamship carrying 5,000 tons cargo now costs \$275,000 in the United States, compared with \$214,000 in Great Britain, though steel is much cheaper here than abroad. Besides labor cost the British advantage lies in the enormous scale of production, Great Britain being the world's "department store" of shipping. Monthly wages on the American vessel are \$1,200 against \$900 on the British ship.

Comparisons are made with foreign subsidies to fast steamships which aggregate \$20,000,000 annually, and it is held that the subsidies proposed for similar American steamships are not more than adequate to secure American ocean mail services to the great continents, equivalent to those of Great Britain, Germany and France. In the past 60 years Great Britain and her colonies have spent over \$240,000,000 for British ocean mail steamships.

On the basis of foreign voyages actually made by American vessels, aggregating 809,000 gross tons, during the calendar year 1899, the expenditures under the Senate subsidy bill would have been \$2,907,000 and under the House bill \$2,790,000. Details and estimates show that, with the additional shipping eligible, the cost during the first year of the bill's operation would be about \$4,500,000. The

maximum of \$9,000,000 would probably be attained during 1904-5, when a reduction of subsidy rates would be necessary. By that time the building of over 500,000 tons of ocean steamships, and the necessary increase in the number and extent of our shipyards would have materially reduced the cost of shipbuilding in the United States, compared with Great Britain and Germany. Under the bill in five years American steamships in foreign trade would doubtless reach 1,200,000 tons, and sail vessels 650,000 tons, sufficient to carry about one-third of our ocean trade.

The act restricting trade between the United States and Hawaii to American vessels is important in developing our shipping interests in the Pacific. The new Australian Confederation is likely to adopt the American coasting principle next year.

Tonnage taxes were \$880,482. In view of our great expenditure for harbor improvements and lighting the coast there seems to be no reason why our tonnage taxes should be so much less than corresponding foreign charges.

The report considers various minor matters relating to American shipping interests. It will not be ready for distribution before December.

SAIL VERSUS STEAM.

In an article on sailing vessels the London Express has this to say:

"The steamer has displaced the sailing ship for all time as a carrier of mails and passengers and of perishable goods that need rapid transit for the market, but there is plenty of work for the sailing ship. Her day is by no means over. Possibly a new era of activity is before the sail-driven vessel. With the price of coal ever rising and the difficulty of obtaining sailors and firemen ever on the increase, it may be found better economy to use a slower sailing vessel than the hurrying steamer, with great saving of the initial expense of powerful engines and the current expenses of crew and fuel. It may be interesting to quote a few figures giving the relative tonnage of steamers and sailing vessels dealing with British commerce at a comparatively recent period. A dozen years ago the steamships of Great Britain and the colonies represented a tonnage of 4,615,000, as against the 4,435,000 of our sailing vessels, while the ships of the United States (apparently about to show us the way in utilizing sail power) were reckoned at 1,770,000 tonnage for steamers, as against 2,540,000 for sailing vessels. Thus, in British commerce, sails fairly held their own against steam, while in America the sail had a big lead in tonnage over steam. It is good news to hear that the sailing ship is not likely to be driven out of the field. She is a thing of beauty, to begin with and aesthetic considerations are not to be disregarded when they can be combined with sound commercial advantage. That this latter point can be secured, with the combination of very big ships and relatively very small crews, appears to be clearly indicated by the line of enterprise adopted by our astute American friends—who are going to bring us cheap coal."

TWO LARGE NEW STEAMERS.

Actual work began this week on the laying of the keels for the large steel steamships to be built at the works of the Eastern Ship Building Co., at Greton, opposite New London.

There was issued from the office of the company an authoritative statement regarding the size of the ships, which shows them to be larger than any vessel in the world now building or planned. The new vessels will be of 20,000 tons register and 33,000 tons displacement, or just 10,000 tons more displacement than the new Atlantic greyhound Deutschland. The new steamers, which are being built primarily for cargo carriers, are not as long as many Atlantic liners, but are much wider and deeper. The following are the principal dimensions: Length, 630 feet; beam, 73 feet; depth, 56 feet. They have each five continuous decks extending the whole length of the ship with three additional partial decks amidships.

Passengers as well as freight will be carried and accommodations are provided for nearly 1,000 passengers in three classes.

The vessels will have a speed of 14 knots an hour and will carry over 4,000 tons of coal in bunkers. They are designed to carry cattle, chilled or frozen meats in refrigerating chambers, fruit or any kind of cargo that may appear for transportation.

It is estimated that when completed the steamships will cost fully \$5,000,000 and they are intended to run from the Pacific coast to Oriental ports in connection with the Great Northern railway.

SHIPOWNERS' LIABILITY FOR COLLISION.

[By a Barrister at Law.]

We have received from the Chamber of Shipping of the United Kingdom, a printed copy of correspondence which has recently taken place between the Chamber and the Board of Trade, on the subject of the "Liability of Shipowners in Collision Cases," pointing out the frequent injustice resulting to British shipowners from the diversity between the law of this country on this subject, and that of other maritime nations. In the early part of the present year Mr. Charles McArthur, M. P., introduced, on behalf of the "Shipowners' Parliamentary Committee," a bill entitled, "The Merchant Shipping (Limitation of Liability of Shipowners) Bill."

The objects of the bill were: (1) To amend the law with regard to the limit of liability of British shipowners in regard to damage done to foreign ships; and (2) to limit the liability of shipowners in cases of damage to property on land in the manner in which their liability is, at present, limited in regard to damage to property afloat.

Under the laws of the United States, and of nearly all European nations, with the exception of Great Britain, the shipowner is entitled to be relieved from all personal responsibility for damage caused in the navigation of his vessel (in the absence of any personal negligence on his own part) by his abandoning the vessel and her freight for the purpose of making good such damage. When, however, the foreign ship is lost there is, practically, no remedy in personam against the foreign shipowner. For many centuries it has been held abroad that property on land is not to be made answerable for property afloat. In Great Britain, on the other hand, the owner—whether his ship is lost or not—is always liable up to £8 per ton, or even to £15 per ton with respect to claims for loss of life or personal injury. The foreign limit, moreover, applies to all accidents which may happen on a given voyage, whereas under the English law, if a ship happen to have two or three collisions on the same voyage, each of these may exhaust the £8 or £15 per ton limit, and the British shipowner may have to pay twice or three times this amount. The maximum of the foreign risk is the loss of ship and freight; the maximum of the British risk is the loss of ship and freight plus £8 or £15 per ton for each collision plus unlimited liability for accidents other than collisions.

Take the case of a collision where the vessel which is to blame is sunk either in consequence of the accident or afterwards, in the prosecution of her voyage. If this vessel be British owned, the foreign owner of the other vessel can recover damages in the British Admiralty Court from the British owner up to £8 or £15 per ton. On the other hand, if the sunken vessel which is in the wrong be a foreigner, the British claimants on behalf of the other vessel cannot recover anything either in England (unless her owners can be served with a writ there), because the vessel cannot be seized there, or abroad, and also because the foreign shipowner will immediately execute a declaration of abandonment. Again, if the case be taken of the wrong-doing vessel not being lost and being arrested in England, there is still no reciprocity; the British shipowners' liability will amount to £8 or £15 per ton (even if his ship be worth only £4 per ton), whereas the foreign shipowner can in such case simply leave the claimants to satisfy themselves out of the value of the ship, thus practically securing for himself the benefit of abandonment which the British shipowner cannot obtain.

The two following cases are sufficient to illustrate the injustice that is done to British shipowners by the existing law:

March 6, 1882.—British steamer Apollo was in collision with the French steamer Precurseur, and foundered. She was found to blame for the collision by the French courts. Owners of Apollo claimed right of abandonment under Article 216 of the French Commercial Code, but the French Court of Cassation held that the law of the flag of the wrong-doing vessel, i. e., the Apollo, must apply, and decided that the owners of the Apollo were liable to pay £8 per ton as their personal liability under British law.

March 24, 1892.—Collision took place between British steamship Indra and German steamship Desterro. The Desterro sank. The owners of the cargo on board the Desterro took proceedings in the English courts and obtained a verdict of "Both to blame," which was upheld on appeal. The result of this action was that the owners of the Indra were compelled to pay the owners of the Desterro and her cargo the sum of £30,862, that being the amount of their statutory liability at £8 per ton plus law costs. If, how-

ever, the owners of the Indra had instituted proceedings in Germany against the German vessel Desterro, they would not have been able to recover one penny, because the Desterro was at the bottom of the sea, and, according to German law, abandonment of the ship and freight, frees an owner from all liability in cases of this description.

By the second clause of Mr. Charles McArthur's bill, it was proposed to limit the liability of the British shipowner as against all claims made by foreign shipowners either to the value of his ship or to the £8 or £15 per ton (whichever was least), and in order that foreign ships might in the courts of this country be under no disadvantage as compared with British ships, it was also proposed to place the same limitation upon the liability of foreign shipowners.

In the month of April, shortly after the second reading of the bill, two articles appeared in the columns of "The Shipping World" dealing with this bill, and pointing out the injustice to British shipowners of the present law. The Attorney-General's chief objection to the clause relating to the abandonment was that it created a different rule for two different plaintiffs in the same court in respect of injury arising out of the same circumstances. He said that the court was to be told to apply a different rule when the plaintiff happened to be a foreigner to that which it would apply if he were a British subject. That would be a most dangerous principle, and he was sure it would promote the strongest and well-founded remonstrances on the part of foreign nations. We do not see how foreign nations could possibly object to such a law. The bill was the result of a conference between the representatives of various maritime nations, who agreed that it was desirable that the English law applicable to collision cases should be brought into conformity with that of the majority of foreign countries. Apart from the hopelessness of converting every other maritime nation under the sun to the approval of British law in respect of limitation of liability, there is the additional circumstance that by acquiescing in the views of the foreign delegates, the British representatives believed they were on the high road to secure the redress of a long-standing grievance. The foreign delegates could see nothing inequitable in British shipowners having the right of abandonment which they themselves already possess, and, therefore, the resolution which was adopted gave the prospect both of international agreement in regard to a vexed question and the removal of an injustice. We cannot make foreign nations adopt our law, but we can give, and it is only fair and just to give, the British shipowner the same privilege when he is sued by a foreigner here, as the foreigner has when the British shipowners sue him in a foreign court.—The Shipping World, London.

VISIBLE SUPPLY OF GRAIN.

As compiled for THE MARINE RECORD, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY Bushels.
Buffalo	2,787,000	468,000	503,000	232,000	866,000
Chicago	12,614,000	1,100,000	3,473,000	629,000	64,000
Detroit	461,000	40,000	109,000	56,000	19,000
Duluth	6,699,000	44,000	575,000	182,000	610,000
Fort William, Ont. .	1,121,000				
Milwaukee	860,000	46,000	246,000	5,000	37,000
Port Arthur, Ont. .	105,000				
Toledo	1,327,000	897,000	1,215,000	26,000	
Toronto	73,000		2,000		180,000
On Canals	257,000	361,000	253,000		269,000
On Lakes	2,304,000	1,489,000	551,000		617,000
On Miss. River		71,000	8,000		
Grand Total	62,361,000	8,428,000	12,832,000	1,371,000	3,286,000
Corresponding Date, 1899	54,001,000	11,060,000	6,125,000	1,362,000	3,119,000
Increase	1,658,000	1,643,000		185,000	
Decrease			10,000		223,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

THE Bethlehem Steel Company, South Bethlehem, Pa. recently received an order from the Anaconda Copper Mining Co. of Anaconda, Mont., for a hollow forged fluid-compressed steel shaft 17' 10" long and 16 3/4" to 20" diameter with a 7" agial hole, to replace a shaft which broke in the hoisting engine of the mine, necessitating a shut-down until the new one could be received. The new shaft was taken in hand under emergency conditions and finished-machined complete within fourteen days from receipt of order, which was two days in advance of contract agreement. It weighed about 12,000 lbs, and on account of the urgent nature of the case, was shipped to Anaconda by express in a special car.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Bill of Lading—Exemption for Latent Defects.—The bill of lading exempted the carrier for "latent defects even existing before shipment or sailing on the voyage; held, that an open port, though unknown to the master before sailing, was not such a "latent defect." The Manitoba, 104 Fed. Rep. (U. S.) 145.

Failure of Owner to Maintain Watch.—The failure of the owner to maintain a watch on the ports during loading, and the negligence by which the port was suffered to remain open when the ship sailed; held a failure "in proper stowage, care and custody" within the first section of the Harter act. The Manitoba, 104 Fed. Rep. (U. S.) 145.

Shipping—Damage to Cargo—Limitation of Liability.—A provision of a bill of lading exempting the carrier from liability for loss or damage occasioned by unseaworthiness, provided the owners had exercised due diligence to make the vessel seaworthy, leaves upon the owners the burden of proving such due diligence, which includes thorough and careful inspection. The Friesland, 104 Fed. Rep. (U. S.) 99.

Bill of Lading—Exemption of "Robbers" and "Barratry."—It was urged that the port had been opened feloniously in an attempt at theft; held, (1) that there was no sufficient evidence of such acts, and (2) quæ re, whether in any event the exemption of "robbers" and "barratry" could be extended beyond the direct and proximate consequences of accomplished acts of theft or robbery or to mere incidents of such attempts unaccomplished, which diligence would have avoided. The Manitoba, 104 Fed. Rep. (U. S.) 145.

Damage to Cargo—Bill of Lading—Exemptions to apply "During Loading"—Harter Act.—A bill of lading provided that the exemptions therein "shall apply not only during the loading and voyage, but during the discharge and until the goods are actually delivered to the consignee"; held, that the shipowner's exemptions were not thereby extended in this case, since the bill of lading in adopting only the Harter act exemptions in these respects, expressly excluded all losses resulting from negligence in regard to seaworthy conditions. The Manitoba, 164 Fed. Rep. (U. S.) 145.

Shipping—Damage to Cargo—Harter Act—Efficient Cause of Loss.—To entitle the shipowner to exemption from liability under the third section of the Harter act, the damage must have "resulted" from the causes therein specified. If the causes of the loss are several, one of which is negligence of the carrier not within that section, and that negligence, and not the sea peril, would, under the settled rules of construction as between ship and shipper, be deemed the efficient cause of the loss, then the exemption of the statute does not apply. The Manitoba, 104 Fed. Rep. (U. S.) 145.

Harter Act—"Management of the Ship."—Held, that whether the term "management of the ship," within the third section of the Harter act does or does not include the care of the ports in the immediate preparation for the voyage, negligence in the care of the ports, so far as necessary to seaworthiness, is not excused by that section, because the shipowner is himself made answerable by that section for due diligence in the fitness of the cargo compartments, including the closing of the ports or other acts necessary to seaworthiness of the vessel, so that he is answerable for a failure by any of his servants in that regard. 104 Fed. Rep. (U. S.) 145.

Shipping—Delivery of Cargo—Shortage.—A bill of lading for a shipment of almonds in bags required the consignees to receive the goods as delivered over the ship's side, and further provided that notice of any claim should be given within 24 hours after discharge. Although having due notice, the consignees did not appear until three days after the discharge had commenced, and on the day it was completed, and did not count the bags until four days later. Several weeks afterwards a claim was made of a shortage of several bags. Held, that under the terms of the contract and the facts shown the vessel was not liable for the shortage, it being shown that all the bags shipped were delivered on the dock. The Naranja, 104 Fed. Rep. (U. S.) 160.

Unfastened Porthole—Seaworthiness.—The steamer M. carried case goods in a between-decks compartment in which was a port 8 or 10 feet above the water line. While on a voyage from New York to London this port was found open, having let in sea water which damaged the cargo, as the port had been unfastened at the inception of the voyage. The compartment was filled with case goods, so that in order to close the port from the inside during the voyage it would have been necessary to open a hatch that was battened down and remove cargo in order to get to the port. Evidence was given that the port had been once closed by the carpenter when the loading began, and the cause of its being afterwards opened during loading did not satisfactorily appear; the most probable surmise being that it was done by workmen engaged in stowing the cargo, who afterwards forgot to refasten the port. Held, that the open port at the beginning of the voyage, the condition of which was unknown to the officers of the ship, made the ship unseaworthy as to cargo stowed in that compartment, since knowledge that such a port is open is one of the indispensable requisites and conditions for closing it when necessary during the voyage. The Manitoba, 104 Fed. Rep. (U. S.) 145.



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CLEVELAND, O., NOVEMBER 22, 1900.

LAKE FISHERIES.

The annual report of the United States Commissioner of Fish and Fisheries, George M. Bowers, says that the inquiry conducted on Lake Erie in the calendar year 1899 showed a decided increase in the fisheries of this lake since the last canvass in quantity and value of the product, capital invested and number of persons employed. This was chiefly shown in the catch of whitefish and lake herring.

The yield of pike and perch, though large, is not considerably larger than in former years. Three thousand, seven hundred and twenty-eight persons and 104 vessels are engaged in the industry, representing an investment of \$2,719,600. In 1899 58,393,000 pounds of products were obtained, worth \$1,150,890. A feature of the fisheries is the number of carp which were taken, the catch amounting to over 3,600,000 pounds, valued at \$51,400.

About 15,000,000 lake trout eggs were collected on Lake Michigan spawning grounds, and over 12,000,000 from the Lake Superior grounds. At the Lake Erie station over 337,838,000 whitefish eggs were hatched and the fry liberated, a gain of nearly 200,000,000 over the year before.

On Lake Ontario, where, for several years there has been a decided falling off in the commercial fisheries, there was found to be a material improvement, the yield being nearly three times as great as in 1897, and it would appear that the effort of the fish cultural operations which have been conducted here are beginning to be felt.

The number of persons engaged and the capital invested are also proportionately greater. The yield in 1899 amounted to nearly 2,500,000 pounds, valued at over \$100,000.

Inquiries now in progress along the Great Lakes and the Mississippi valley show that an increasing number of carp are being caught and shipped chiefly to the markets of the large eastern cities.

From Lake Erie and the Ohio river and certain of its tributaries the quantity of this species taken is nine times as great as six years ago. From the Illinois river more carp are taken than all other species combined, the catch for 1899 amounting to 6,332,900 pounds, valued at \$189,900. It would appear that this fish will become more and more an important factor in the food fish supply of the country.

The American fur seal herd continues to decrease in numbers though the continuance of pelagic sealing and the recent counts show that fewer pups are born.

The stocking of suitable streams with the various species of trout has been continued, special attention being paid to the distribution of brook trout, rainbow trout and black spotted trout.

NAVAL OFFICERS CENSURED.

The naval court of inquiry, which investigated the collision on Oct. 6, near Newport, of the torpedo boats Dahlgren and T. A. M. Craven has made its report recommending that Lieutenant Ford Brown of the Craven be tried by court martial and that Lieutenant Wm. G. Miller, of the Dahlgren, be censured.

On the recommendation of the Judge Advocate General, Secretary Long dispensed with the court martial and administered censure in both cases.

The report of the board gives the circumstances of the collision which occurred when the boats were off Castle Hill, the Dahlgren ahead and the Craven following about one or two hundred yards away. When the Dahlgren made a sudden and proper change of course, a collision became unavoidable unless the Craven had maintained perfect lookouts, which the board finds was not done. There was only one lookout, on the side away from the Dahlgren, and the commanding officer at the moment of the change of course, left the deck and went into the conning tower to look at the chart. The board finds, therefore, that Lieut. Brown was mainly responsible for the collision. It also holds that Lieut. Miller committed an error of judgment in not, under the circumstances, indicating in some way the intended change of course to Lieut. Brown, although the court says it has in mind the fact that it has not been customary in handling torpedo boats in company to give previous notification of a change of course. The recommendation which was approved by Secretary Long, after approving the general findings of the board, says:

"In view, however, of the fact that few officers have had experience in handling of torpedo boats and of the inadvisability of inculcating in the minds of the younger officers of the service, to whom the command of such boats must necessarily be entrusted, an excess of caution which might seriously interfere with their efficiency, it is believed that the trial by general court martial of Lieut. Ford Brown, while properly recommended by the court, is unnecessary, and I have the honor to advise, therefore, that said officer be, as in the case of Lieut. Wm. G. Miller, censured."

A WOMAN SIGNAL OFFICER.

The distinction of being the only feminine weather forecaster in the United States belongs to Mrs. L. H. Greenwald, of York, Pa. She not only fills all the requirements of the position satisfactorily, but she has been several times recommended for especial efficiency. She is thoroughly versed in the science of meteorology and comparative climatology, and has a practical knowledge of the work she has undertaken.

For several years now she has occupied the meteorological chair of the National Science Club, of which she is now president, says an interviewer in the Chicago Chronicle. At the weather department of the Paris exposition she has a manuscript exhibit which holds a prominent place among the manuals of weather reports. Mrs. Greenwald likes her work and in speaking of it recently said:

"I keep a full station record of weather and climate upon the same plan as that of the regular weather stations. There is considerable expenditure of thought and care connected with the work, as, besides being on the United States weather bureau, I am local authority for all past extremes of meteorological data, as well as weather forecaster and climate expert. All the farmers look to me to tell them the correct time to plant their crops, and I am, in a measure, held responsible for all injurious or favorable conditions which affect their crops.

"Each month I report in full to the United States bureau at Washington, and also the central state office at Philadelphia. In addition to this I publish monthly reports in two of our local papers and issue a daily report in one. Monday of each week I go to Washington and furnish a crop report to the crop and climate service of the United States Weather Bureau, and review the reports of the other experts.

"I have been carrying on the work for over 12 terms, and many women have been interested in it. For the better study of climate and other scientific subjects, the National Science Club was organized. This club for women is just what its name implies, and the watchword all along the line is "work." The society has no social side, and many of its members rank among the most scientific women of the day. Its object is to unite for improvement and encouragement all women who are interested in science and original research.

COST OF SHIPBUILDING.

At the eighth annual meeting of the Society of Naval Architects and Marine Engineers at New York last week, an interesting feature was the paper of Geo. W. Dickie, of the Union Iron Works, San Francisco, discussing the question whether American shipbuilders under present conditions could compete with foreign builders of the largest class of ocean passenger and freight steamships. Mr. Dickie said that there were three points to be considered—skill in design, cost of labor, and cost of material. In regard to skill, Mr. Dickie said that he found it difficult to make any just comparison between the product of one shipbuilder and another. "As to what we may be able to do in regard to equalizing the cost of labor as between our yards and those of Great Britain, I do not think that it will be brought about by any attempt to equalize the rate of wages paid throughout the shipbuilding world, but I hope that some of the rising shipbuilders among the younger members of our profession may be able to devise some method whereby every part of a ship, both hull and machinery, will have a labor value fixed for it that will not exceed what such a piece of labor costs elsewhere, and that whoever, by his labor, contributes to the production of that piece shall receive as recompense the percentage that his labor represents in the total labor required to complete the part on which he worked."

The English shipbuilder had an advantage over the American builder in the cost of material to the extent of 10 per cent., Mr. Dickie said. The conclusion he arrived at was that we were not yet in a position to compete successfully all around with the shipbuilders of Europe, but he held out this hope: "As we gain experience and adopt new methods, especially in regard to the management of that most important factor, labor, this difference may ultimately disappear. Some wise legislation will have to be devised that will enable the American shipowner to build his ships here, although costing somewhat more, until we have found out the way to pay American labor to build American ships that will not cost more than the British ship built by British labor. But this subject belongs to that class of subjects which cannot be demonstrated by any statement of facts, as facts in one place are not facts in another, and facts to-day are not facts to-morrow."

In the discussion which followed the reading of Mr. Dickie's paper, representatives of the shipbuilders on the Great Lakes contended that we were on terms to compete with the builders abroad, but the majority of the shipbuilders present did not take this view. They agreed that the principal handicap to shipbuilding here was the cost of labor, but pointed out that the arrangement of the hours of labor in this country was better than in Europe.

NAVAL STEAM ENGINEERING.

Formerly the steam boiler never received the serious consideration of scientific students, most, if not all, the attention being devoted to the improvement and investigation of the steam engine. The result of this neglect is that at the expiration of more than a century from the birth of the steam engine, there is a most striking difference of opinion among engineers upon the respective qualifications of the water-tube steam generator and the shell or cylindrical steam generator.

Another result of the want or the absence of knowledge of all the subjects that bear upon the correct design of a steam generator, and one that is ever associated with ignorance, is the fact that an innovation is established, procedure or design is prevented from lack of confidence. This want of confidence has given birth to the principle of the policy of follow-my-leader, which has been adopted by most of the naval powers. Of all of them, France, and in a less degree the United States, deserves the praise that should be unstintingly given to any nation that adopts the brave part of pioneer of new developments in structural science applied to battleship construction.

In the work of pioneering the British admiralty this hitherto notoriously lagged in the rear, and its only claim to recognition is the fact that it is of all the powers the most generously endowed with purchasing power by a sadly non-reflecting people.—Engineering Magazine.

Andrew Carnegie has just authorized the expenditure of from three to five millions of dollars on the harbor at Conneaut. He was there on an inspection trip, and looked things over. He made the statement three years ago that he would make Conneaut river the best harbor on the lakes.

FOR THE COAST TRADE.

This week the steamer Asuncion, built by the American Ship Building Co., to the order of A. B. Wolvin and others, left for the ocean to engage in the coasting trade. Her completion at the yards at Lorain marks an epoch in the history of lake shipbuilding. Lorain is becoming known all over this country as the point where steel can be made the cheapest, and whose harbor is one of the best on the chain of lakes. Shipbuilders along the Atlantic scarcely dreamed of the shipyards on the lakes competing with them in the construction of ocean craft, yet they realize now that such a fact is only too true. That vessels of 3,000-tons capacity have been built for the ocean, and that larger vessels to be built in two sections and joined after passing the St. Lawrence system of canals, is being considered, is causing persons all over the country and especially, along the coast, to look on the map for Lorain. It is the same little place where two of the largest boats on the lakes, the Gates and the Hill were built, which caused the city to be much spoken of. The Asuncion and the Paraguay were built especially for salt water service and will find plenty of work at fair rates in the coasting trade. Other boats have been built at Lorain to do ocean service, but none of them have been so well fitted out for the work as these two boats. The Asuncion cleared in charge of Capt. L. A. Rand and Chief Engineer Ostrandt. A. B. Wolvin's chief engineer, Joseph Hays, master mechanic Woods, of the shipyard, and John Coleman, of the Babcock & Wilcox Co., accompanied the boat on her maiden trip.

The work on the boat the past two weeks has been the most remarkable ever done at the Lorain yards. Boilers were set, machinery placed, carpenter work, painting, electric wiring and any amount of other work was done on the boat in that time. Night and day men worked getting her in shape for departure.

The Asuncion, as well as the Paraguay, is 256 feet long over all; molded depth, 26 feet and six inches; molded breadth, 42 feet. The engines were made by the American Ship Building Co., and are of quadruple expansion type, having cylinders 15, 23, 35 and 54 inches in diameter with a common stroke of 36 inches. They are of 1,500 horse power and are furnished steam from two Babcock & Wilcox boilers with a steam pressure of 250 pounds. The ship is lighted by an Ellwell & Parker generator, made in Cleveland, driven by a W. D. Forbes & Co., of Hoboken, dynamo engine. The switch-board was made in Newark by the Western Electric Instrument Co. while the electric telegraph service between captain and engineer is of Chadburn make, of Liverpool. The boat has Wheeler condensers and circulating pumps and air draft supplied by machinery made by B. E. Sturtevant, of Boston. Blake pumps, of New York, supply the boat with a full water works system. A Globe steering gear is in use. She can carry 2,600 gallons of fresh water for drinking and cooking purposes. About 1,300 gallons of water can be purified daily by a Reilly evaporator made in New York. The crew consists of 29 all told and they have been given excellent accommodation.

ANOTHER ENGINEER OFFICER FOR LAKE SERVICE.

The recent appointment of Maj. Fitch as an associate of Col. Lydecker in Great Lakes engineering work in this district will again establish two separate engineering departments with headquarters in Detroit, says the Detroit Journal. Maj. Fitch who is now in an important department on the New England coast, will have charge of the engineering work on the smaller rivers and all harbors on the east coast of Michigan, a work which during the earlier regime of Gen. Poe in this district, was in charge of Col. Ludlow. Gen. Poe at that time gave his entire attention to the problem of deep waterways. In 1893 Col. Ludlow was succeeded in his department by Col. Lydecker and upon the death of Gen. Poe, the deep waterways work being practically complete to what was considered a good depth, the work of the two offices was combined and Col. Lydecker placed in charge of the entire district. Since that time the consideration of propositions to deepen and widen the channels has greatly increased the work of Col. Lydecker's office. Since the beginning of the Spanish-American war the staff of the engineer executive officers has been small, and Col. Lydecker was obliged to shoulder the entire executive work his district. Maj. Fitch will have a separate office and force of assistants and the problem of improving the through deep waterways so as to make a 600 foot channel, 21 feet deep, will engage the entire time of the present engineer and assistants.

TRANSCONTINENTAL TRAFFIC.

Through service for passengers and freight from New York to Asia is the proposition said to be involved in the combination of the Hill and Morgan lake, rail and ocean lines. There will be two routes for this. One will be from New York to Buffalo over the Lehigh or Erie, from Buffalo to Duluth by the Northern Steamship Company boats, to St. Paul via the St. Paul and Duluth railroad, recently purchased by the Northern Pacific railroad, and then on to the Pacific coast by either the Northern Pacific or the Great Northern. The other route would be from New York to Chicago via the Erie railroad, on to St. Paul via the Wisconsin Central, and then by either of the two western roads to the coast. At the Pacific ports the business will be taken on to the orient in the transpacific steamers that are being built by J. J. Hill in the consummation of his fifteen years' attempt to build up the Asiatic trade.

NOT AN INDIAN.

A good story is told in the Duluth News-Tribune this week about a well-known lake shipmaster. The yarn is spun in this way.

Among the Bay City crowd in Duluth, permanent residents and transients, there are some good story tellers and many practical jokers. Of course the stories are all true, but if anybody refuses to accept them as such, they will at least admit most of them are good. A well-known Bay City man tells the following on Capt. John McNeil, of the steamer Cranage:

"Some ten years ago Capt. McNeil was on the steamer Leuty. At that time Bay City was still a big factor in the lumber shipping industry, and the town was one of the liveliest and best in Michigan. In Bay City at that time was a German whose first name was Otto. His Christian name was known only to Otto, I guess, for I never heard anybody try to pronounce it. Well, Otto kept a fine saloon, much patronized by vesselmen and others connected with the shipping and transportation business. One day when the Leuty was in port Capt. McNeil accepted the invitation of a number of his Bay City business acquaintances to drop into Otto's to splice the main brace. He is a man who seldom drinks anything stronger than coffee, but he did not want to appear unsociable, so he joined the party. Now Capt. McNeil is a big, powerful man of dark complexion. Ten years ago he was clean shaven, and his face was covered with a beautiful bronze produced by the lake winds and exposure to all kinds of weather. His face as he stood at the bar was in striking contrast to the white-faced land lubbers ranged up alongside of him. Otto was behind the bar and served the drinks with smiling obsequiousness. A local wag named Bill Bridges was a member of the party. He noticed the bronzed face of Capt. McNeil and it gave him an idea. When the captain and his friends started out Bridges lingered long enough to tell Otto that McNeil was an Indian and that the German saloonkeeper was liable to be sent to the penitentiary for a violation of the law against selling liquor to Indians.

"Ach, mein Gott," exclaimed Otto. "Vat haf I done already yet?"

"Bridges placed his fingers warningly to his lips and hurried out after his friends. He said nothing to any of them about what he had told the German saloonkeeper. In the course of half an hour Bridges contrived to steer the party back to Otto's. Nobody except Bridges noticed the searching, frightened look that Otto gave the unconscious vesselman. Drinks were ordered and Otto placed glasses for everybody except Capt. McNeil.

"Don't forget the captain here, Dutchy," said one of the party, jerking his thumb toward Capt. McNeil. A pained but resolute look came into Otto's eyes. "I can't sell him noddings," said Otto desperately.

"Why?" demanded Capt. McNeil, with surprise, and just a trace of sternness in his voice.

"Because you are an Indian, and—Help, help, stop him!" yelled Otto as the stalwart form of Capt. McNeil shot half over the bar, and would have gone clear over if his friends had not caught hold of his coat and held him back. It took the whole party to keep Capt. McNeil from taking swift and ample revenge for the insult, which Otto had unwittingly given the big sailor. Explanations were made after Capt. McNeil could be quieted. Bridges made a clean breast of it. He was afraid that he had sprung a bigger joke than he could take care of, and was in a hurry to call it off."

Ice is forming, according to reports from Houghton, in Torch Lake cut. Canal improvement work there has been suspended.

REPORTED BY THE LOOKOUT.

Good sleighing is reported at all of the northern Michigan ports and snowstorms are so frequent at the north end of the lake as to seriously impede navigation.

Colonel Charles Caughlin, for many years marine editor of the Toledo Blade, died at his home in Toledo, Ohio, after a sickness of six weeks. He was 65 years old and well known to vessel men.

The Anchor liner Conestoga reached Escanaba Monday, and landed her captain in the hospital. He is said to be suffering from an attack of typhoid fever. Capt. G. L. Thompson, late of the car-ferry Muskegon, was summoned to proceed to Escanaba from Milwaukee, and take the Conestoga through to Chicago. It is possible that Capt. Thompson may continue in command of the steamer until the close of the season.

The order for the new yacht to defend the America's cup in the month of August next against Shamrock II, was placed with the Herreshoffs on Wednesday, Nov. 14, the contract required in the case being signed in New York on that day. Now the work of building will be carried on as fast as it is practicable. An early launching of the boat will be required because of the early date of the races, so it is probable that the new craft will be afloat the latter part of April or the first of May.

The Richelieu & Ontario Navigation Co. awarded to the Bertram Co., of Toronto, the contract for a new steamer for the route from Toronto to Quebec. This vessel, which will be a floating palace, will be 340 feet long, or about 60 feet longer than the new vessel Toronto, on the upper route, and will have about double the capacity of the steamer Quebec, now running from Toronto to Quebec. The R. & O. Navigation Co. seem determined to keep up with, if not a little ahead of the times in so far as their tonnage is concerned.

M. A. Hanna & Co., of Cleveland, will handle in the United States the Michipicoten ore which is being mined by F. H. Clergue in the name of the Algona Iron Company. The ore is said to be equal to the best Minnesota hard ore, and is therefore of the quality to stand the duty of 40 cents per ton and compete with the domestic ores. The rail haul at Michipicoten is very short, and the water haul is also much shorter than from the Minnesota mines. Much of the Michipicoten ore has gone to the furnaces on Georgian Bay, but the Hanna furnaces will work up all that comes to the United States.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR,
NINTH DISTRICT, CHICAGO, ILL., November 21, 1900.

STURGEON BAY CANAL.
Notice is hereby given that a scow, loaded with stone, is sunk in Sturgeon Bay canal, abreast of the light-house keeper's residence, and is an obstruction to navigation.

By order of the Light-House Board.
F. M. SYMONDS, Commander, U. S. Navy.
Inspector 9th Light-House District.

MARINE PATENTS.

Patents issued November 15, 1900. Reported especially for the MARINE RECORD. We furnish complete copies of patents at the rate of 10 cents each.

- 661,520. Automatic steering device for torpedoes. C. D. Haskins, Newton, Mass.
- 661,535. Torpedo. E. Kaselowsky, Berlin, Germany.
- 661,573. Buoy. Chas. I. Berg, New York City.
- 661,663. Means for towing canal boats. C. A. B. D. Kottgen, assignor to the Siemens Halske Co., Chicago Ill.
- 661,577. Motor Controlling Device, E. N. Dickerson, Stovall, N. C.

LETTERS AT DETROIT MARINE POST OFFICE.

November 21, 1900.

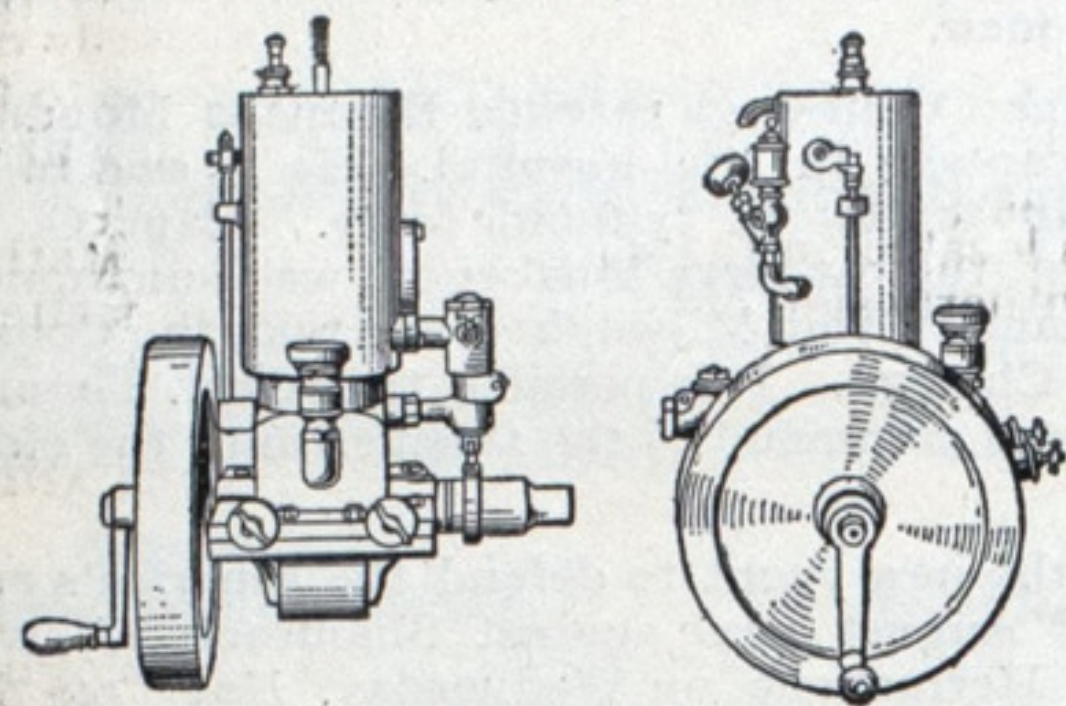
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| Boomsliiter Peter—2 Stephenson | Mercier, Geo., Bermuda |
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CANADIAN MINES.

Nature seems to be no less kind in providing fresh supplies of valuable products of the mine when new demands arise for them than in raising up new men to meet great national emergencies. There have been those who foresaw the exhaustion of coal and iron and gold by the increasing demands of commerce, but the concern has passed, for many generations at least, even while the alarmists have been doing their calculating. Amazing deposits of the useful and precious minerals have been found in untouched regions of North America, waiting communication and development to make them of immediate industrial service.

It is particularly interesting to notice the advance in mining discoveries and enterprises in the northern half of the continent. From Cape Nome to Newfoundland the prospectors have been at work winning the usual proportion of rewards and opening new mineral fields to the world. The Alaskan gold deposits are more spectacular but no more valuable than the iron and coal of Newfoundland, which are now in a fair way to be developed in all their magnitude by the colonial magnate, Reid, who makes and mars governments, in what threatened to become virtually his pocket borough. The whole of the Labrador Peninsula between Hudson's Bay and the ocean promises great mineral wealth when it shall be explored thoroughly. On the other side of Hudson's Bay, between its shores and the Canadian Rocky Mountains, lie the great cattle ranges and the alluvial plains of the Northwest Territories, fertile everywhere and habitable far north of the region now settled. In the more northerly portion of the region, in the "great lone land" of Canada, lie lakes and river systems draining into the Arctic Ocean, which are known to few travelers except the men of the Hudson's Bay Company. From their shores begin to come accounts of the discovery of copper, iron and even gold in ample quantities to repay exploration. Around Great Slave Lake, for instance, a body of water as large as Lake Erie, the copper deposits are said to be of immense wealth. Close to our own boundaries, the gold of British Columbia and the Rainy Lake fields, the coal of Alberta, the iron of Algoma and the nickel of Sudbury are all increasing in importance.

Stimulated by the northern discoveries and the prospect of industrial development, Canadians are working toward the improvement of communication with the remoter regions. Already a railway is under construction from the north shore of Lake Huron north to Moose Factory on James Bay, the southern extension of Hudson's Bay—which will tap valuable iron and timber lands and find an ocean port for the product, with return cargoes from Europe to interior Canada. The long-discussed plan of subsidizing a railway from Winnipeg to Hudson's Bay is developing into the idea of improving the direct water communication by way of Lake Winnipeg and the Nelson river to York Fac-

tory, which would permit cheap and convenient transport for several months each year. Steamers on the Saskatchewan and the Mackenzie rivers and Lake Athabasca and Great Slave Lake are multiplying rapidly. It is evident that the industrial development of Canada is to show remarkable results before many years.—Albany, N. Y., Times-Union.

NOTES.

THE Niclausse tubular boiler, which has recently been under trial in the German Navy, has proved a failure in some respects, the Freya, a new vessel fitted with it, having been able to accomplish only eighteen knots. This is the same class of boiler that is fitted in the British torpedo gunboat Seagull.

ADVICES received from the United Kingdom indicate that the newly established trade will be of short duration. The Scotch steel makers alarmed at these heavy importations, have reduced their prices five shillings, making fifteen shillings reduction in the last three weeks. Several of the British iron masters have cut down as much as twenty shillings on the ton.—American Manufacturer, Pittsburg.

CLYDE shipbuilders during the last few weeks have placed orders in the country for 150,000 tons of steel thus effecting a saving of \$250,000. Philadelphia has been selected as the port of clearance for the big assignment. The steamship Chatfield, which recently arrived in the Clyde from Philadelphia, has a cargo of 2,000 tons of steel scrap, 500 tons of rounds, 130 tons of angles and tees and 14 tons of flats. This was after discharging part of the cargo at Belfast. Exports of iron and steel to Scotland by the regular liners have also been heavy. Probably the largest cargo shipped from this port was that on the British steamship Arlington now en route to Newport and Swansea. She has 43,699 flat steel billets.

THE German Emperor has issued instructions bristling with minute details as to the procedure to be followed when a warship is launched in a German yard. The Emperor himself is on all occasions to nominate the person to christen the ship. A guard of honor, of one company with colors and band, is to attend; the Emperor again reserving to himself the right of deciding which corps shall furnish the guard. As soon as the ship begins to move, the guard is to present arms, the band is to play the national hymn. If the Emperor is present a salute of 21 guns is to be fired. As the ship enters the water, three cheers are to be given. All officers not on duty, and deputations from various naval and military bodies, are to be present, each on its appointed place, and each behaving in the appointed manner. The dress orders, decorations, etc. to be worn by all assisting or present at the ceremony, are all minutely prescribed.—Army and Navy Journal.

THE 33rd volume of the "Record of American and Foreign Shipping" for 1901 will be ready for delivery to subscribers about Dec. 20, 1900, and will contain: Reports and particulars of about 17,000 vessels engaged in the American, inland and foreign trade. Rules for the construction of iron, steel and wooden vessels. Rules for the construction of steam machinery for vessels. Suggestions and recommendations governing the installation of electric lighting and power apparatus on shipboard. Names and location in the United States of shipbuilders and of constructors of marine machinery and boilers for vessels, and of dry docks and marine railways, with capacity of same. A list of representatives of marine underwriters throughout the world, and other valuable information of special importance to underwriters and all firms of individuals interested in shipping. This work has the official approval of underwriters and is universally recognized as a standard classification and register of shipping.

THE last ten years have witnessed a notable change in the production of copper. Formerly the purest metal in the world was the native copper mined on the shores of Lake Superior, no process in the possession of man being able to refine to the same degree of toughness. As the lake mines became deeper a gradual change took place, the copper being increasingly alloyed with iron which, though present in very small quantity, is no longer confined to the few thousandths that were found formerly. The lake mines are now working at the depth of a mile, or from half a mile to a mile in different mines and there is no prospect that a favorable change will take place. The result is that lake copper may, in future, require refining; for a competitor has risen in copper refined by the electrolytic method, which is not only purer than the present lake products, but purer, perhaps, than lake copper ever was. The impurities in copper are many: iron, lead, zinc, silver, arsenic, antimony, bismuth, etc., but the new methods of refining are so perfect that the sum total of those impurities is constantly brought within one or two tenths of one per cent. Already the artificially refined metal has surpassed the lake native copper in electric conductivity and is used in the numerous installations of electric roads. Other physical characteristics are less well known. For ordinary brass, copper refined by the old method and less pure than either lake or electrolytic is used, but for the bronzes used in marine, and especially in important naval work, it is necessary to employ a metal of standard quality. Experiments are now in progress to determine several of the problems which arise from the superior chemical purity of the electrolytic metal. If its physical properties are superior to those of the native metal it will undoubtedly be employed in castings requiring strength. Then the lake mines will probably take up electrolytic refining and native copper will pass out of use.

NOVA SCOTIA STEEL AND IRON.

A. J. Moxham, general manager of the Dominion Iron & Steel Co., of Sydney, C. B., said when interviewed recently about the Cape Breton plant, that four furnaces are in course of erection; the first of these is expected to be ready for work in the early part of November, and the last one will be completed early in the spring of 1901. The manufacture of steel will be begun by the 1st of July, 1901. The four blast furnaces will, it is estimated, turn out from 1,200 to 1,400 tons daily, or from 350 to 400 tons each daily, working on Belle Island ore. This unusually large product is possible, because the Belle Island ore is "kind" in the furnace, that is, it is easily smelted. Practically the whole of the metal output will be manufactured into steel when finished. Two of the blast furnaces are almost finished, and the others well started. The coke ovens are about three-quarters complete, while the steel plant is well on the way to completion. The water works and railroad system are now ready. Work will be continued all the winter.

Mr. Moxham says there was less time lost last winter than either during the spring or summer months, owing to the unusually good weather which prevailed. In answer to a question as to where the bulk of steel output would find a market, Mr. Moxham replied that the market would be practically the whole world, the United States included, so far as the export business was concerned. The American manufacturer gets a rebate of 99 per cent. of the duty on everything brought in for export purposes.

When asked how the Dominion Iron & Steel Co., would compete with the American manufacturers, like those of Birmingham, Ala., for example, Mr. Moxham said:

"Our two closest competitors are Pittsburg and Birmingham. Theoretically, the latter is our closest competitor, but in actual practice it will be the former; and the reason is this, i. e., that Birmingham has not as yet gone far beyond the crude portion of steel manufacture, while Pittsburg has developed the industry to the utmost point of finished manufacture. If you want an exact comparison of relative advantages, I will try to give it to you. To manufacture one ton of steel in Pittsburg they have to carry two tons of ore over 230 miles of railroad and 1,000 miles of water. They have also to take two tons of coal, or its equivalent in coke, over 60 miles, and one half ton of limestone over, say, 100 miles. Omitting the lake traffic, this is equivalent to 580 tons railroad miles; and, in addition to this, Pittsburg has to carry each ton of steel 450 miles to reach tidewater. Birmingham has the raw materials pretty well assembled, but the finished steel must be carried 600 miles before it reaches tide-water.

"Against both of these places Sydney has about 400 miles of sea haul on iron ore, nothing whatever on coal, and nothing on finished material, because she manufactures at tide-water. Nor is that all, Sydney is 1,000 miles nearer European ports than New York, and 3,000 miles nearer than Mobile, the shipping point for Birmingham."

Speaking of the question of government tariffs, Mr. Moxham said:

"The Dominion Iron & Steel Co., could ship into the United States even for domestic use at a profit, in spite of the tariff.

The only thing that deters them from doing so is the consideration that more profitable markets exist elsewhere."

Mr. Moxham, when asked if he could state approximately about what he thought Sydney's advantage over the American companies ought to be said:

"In dollars and cents I would put Sydney's advantages at from five dollars to six dollars per ton over Pittsburg; and probably from three dollars to four dollars on Birmingham, Ala., that is, measuring by export business in all three cases, and leaving out the question of government bounty."

He was then asked what he considered a fair profit on steel, to which he replied:

"A perpetual guarantee of two dollars per ton profit on the product would be a handsome recompense to capital in the steel business."

Regarding the situation locally, Mr. Moxham says that the town of Sydney is forging ahead rapidly, but along legitimate lines. Some 800 houses have gone up within the last few months. There are banks and other public buildings. Several miles of sewers and water pipes have been laid; and in other ways, similarly, the place is developing. He states, however, that the local labor will not be sufficient to fill the bill, and men will be needed from all over Canada. The chief classes of labor at present are the Italians, Newfoundlanders, Cape Bretonians and French-Canadians. Next year there will in all probability, be somewhere in the neighborhood of 4,000 men employed at Sydney, and between 1,000 and 1,200 at the mines, which are some 400 miles distant from the town.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York report the condition of the eastern freight market as follows:

The advance in grain freights to which we referred in our last report has not exhibited any staying qualities, since in spite of sustained enquiry from Europe, shippers were enabled to enforce a reaction owing to rather free offering of tonnage. At the moment prompt steamers command a premium over shipments in remoter periods, the enquiry under which extends to March. Chartering for cotton from the Atlantic ports continues entirely suspended, whilst the declining tendency, which has set in for fixtures from the Gulf shows no improvement. Time charters for special trades continue matter of bargain, but may be generally quoted for large vessels at or near 6s on vessel's dead weight whilst charterers for the Atlantic and general trades are holding for 5s. The enquiry for timber and coal bottoms has not improved, shippers holding from the market at the moment, but any decided decline in freights generally will doubtless occasion quite a revival of activity in either branch.

The market for sail tonnage appears to have settled down on the late moderation in rates.

Though spot tonnage continues very scarce, there is rather an increase in prospective offerings and this fact, for the moment at least, dims the prospects of an early improvement.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—OHIO.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., November 13, 1900.

MARBLEHEAD LIGHT STATION.—Notice is hereby given that, on or about November 20, 1900, the fixed white light of the fourth order at this station will be temporarily discontinued for the purpose of making improvements to the tower lantern, and a fixed white lens-lantern light will be exhibited in its place during the progress of the work.

This station is located on the northeasterly end of Marblehead and the southerly side of the channel between Kelley's and Bass islands and the mainland.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—MICHIGAN AND WISCONSIN.

LAKE SUPERIOR LIGHT STATIONS.

CLOSE OF NAVIGATION, 1900.—Notice is hereby given that the lights and fog signals will be maintained at the following-named light stations until December 1, after that date they can not be depended upon, but will be kept in operation as long as practicable thereafter: Granite Island, Huron Island, Stannard Rock, Manitou, Gull Rock, Outer Island, Michigan Island, Raspberry Island, Devil's Island, Sand Island, Isle Royale (Menagerie Island), Passage Island.

By order of the Light-House Board.

FRANCIS J. HIGGINSON,
Rear-Admiral, U. S. Navy, Chairman.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DISTRICT,
DETROIT, MICH., November 17, 1900.

Information is hereby given that the fog-signal at the Big Sable Light-Station, south shore of Lake Superior, Mich., is out of order. It is doubtful if it can be repaired before the close of navigation, and mariners are warned that this fog-signal cannot be relied upon until further notice.

By order of the Light House Board:

J. C. WILSON, Commander, U.S.N.,
Inspector 11th District.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DIST.,
CHICAGO, ILL., November 16, 1900.

ST. JOSEPH HARBOR, MICH.—Notice is hereby given that the St. Joseph Entrance red can buoy at the entrance to the harbor of St. Joseph, Michigan, will be replaced by a spar buoy similarly painted, on or after November 17th, 1900.

Notice is hereby given that Lansing Shoal Light Vessel, No. 55, northerly end of Lake Michigan; White Shoal Light Vessel No. 56, and Gray's Reef Light Vessel No. 57, Straits of Mackinac, Lake Michigan, and Eleven Foot Shoal Light Vessel No. 60, Green Bay, Michigan, have been directed to leave their stations for the winter, on or about December 10th, 1900.

Notice will be issued when the vessels have left their stations.

By order of the Light-House Board:

F. M. SYMONDS, Commander, U. S. N.
Inspector 9th L. H. District.

Effect of Custom.—In view of the charter fixing the duty and liability of the vessel in regard to inland freights, no custom or practice, even if established, could be allowed to affect or change the express contract of the parties. Neall et al. vs. General Marine Ins. Co., of Dresden, 104 Fed. Rep. (U. S.) 92.

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J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.
LA SALLE & CO., Board of Trade Building, Duluth, Minn.

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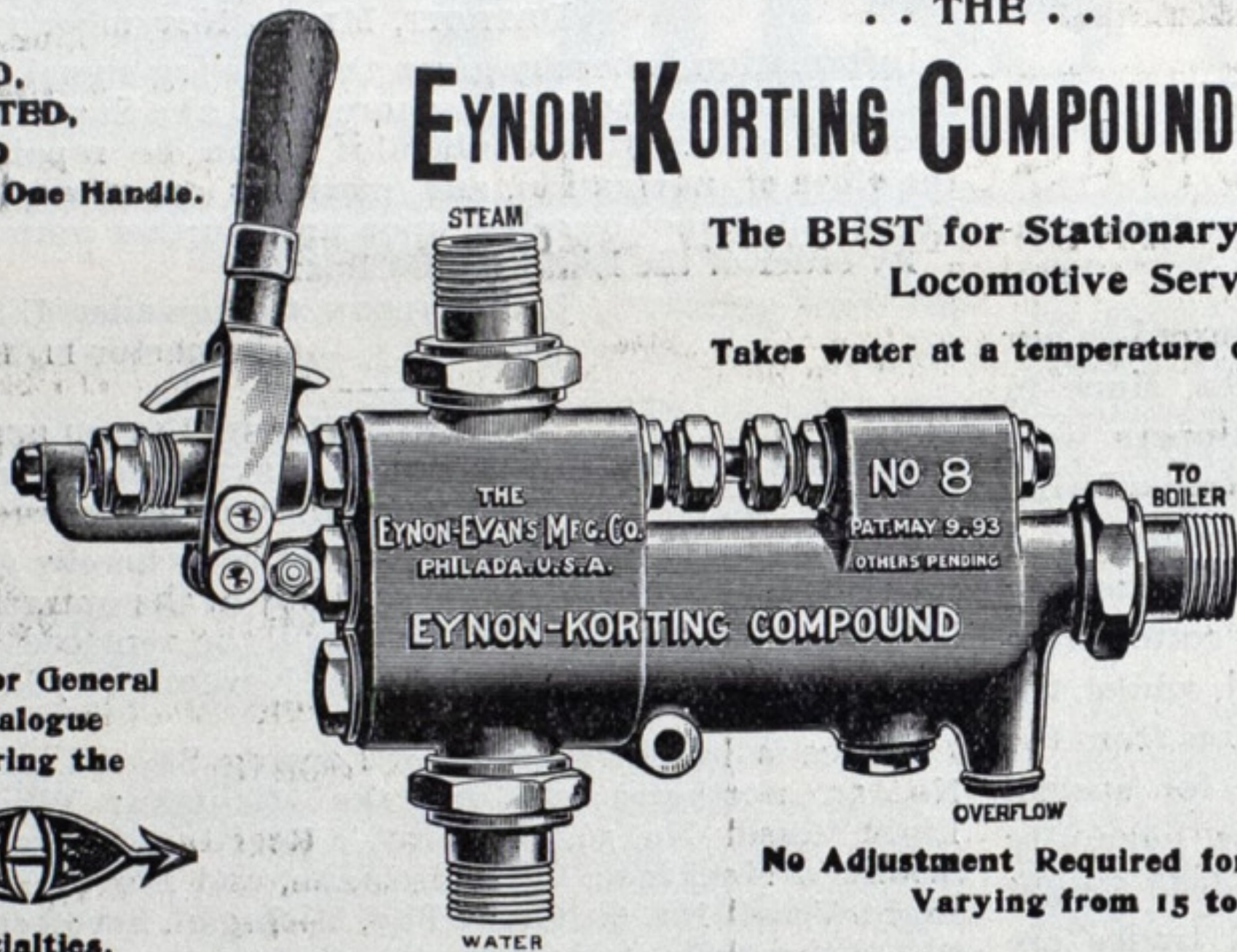
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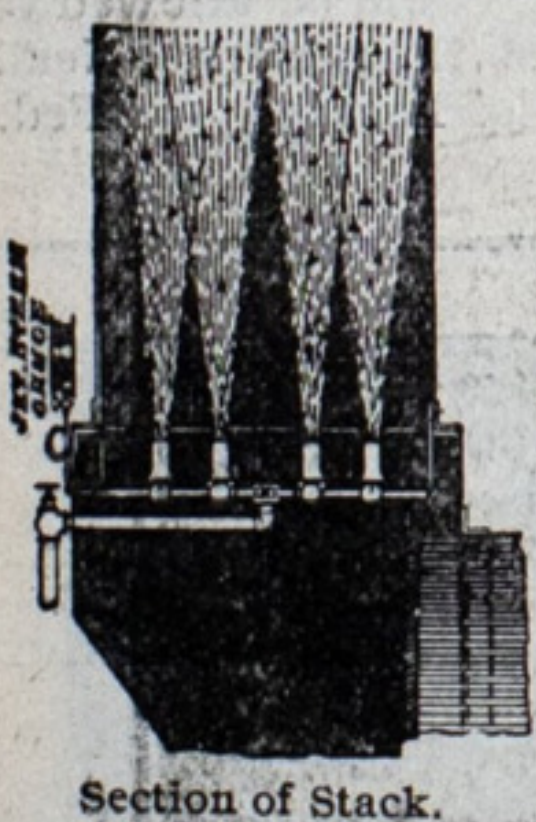
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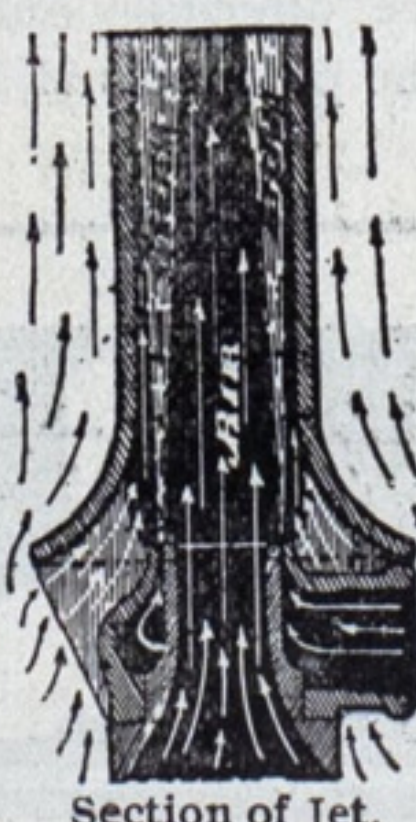
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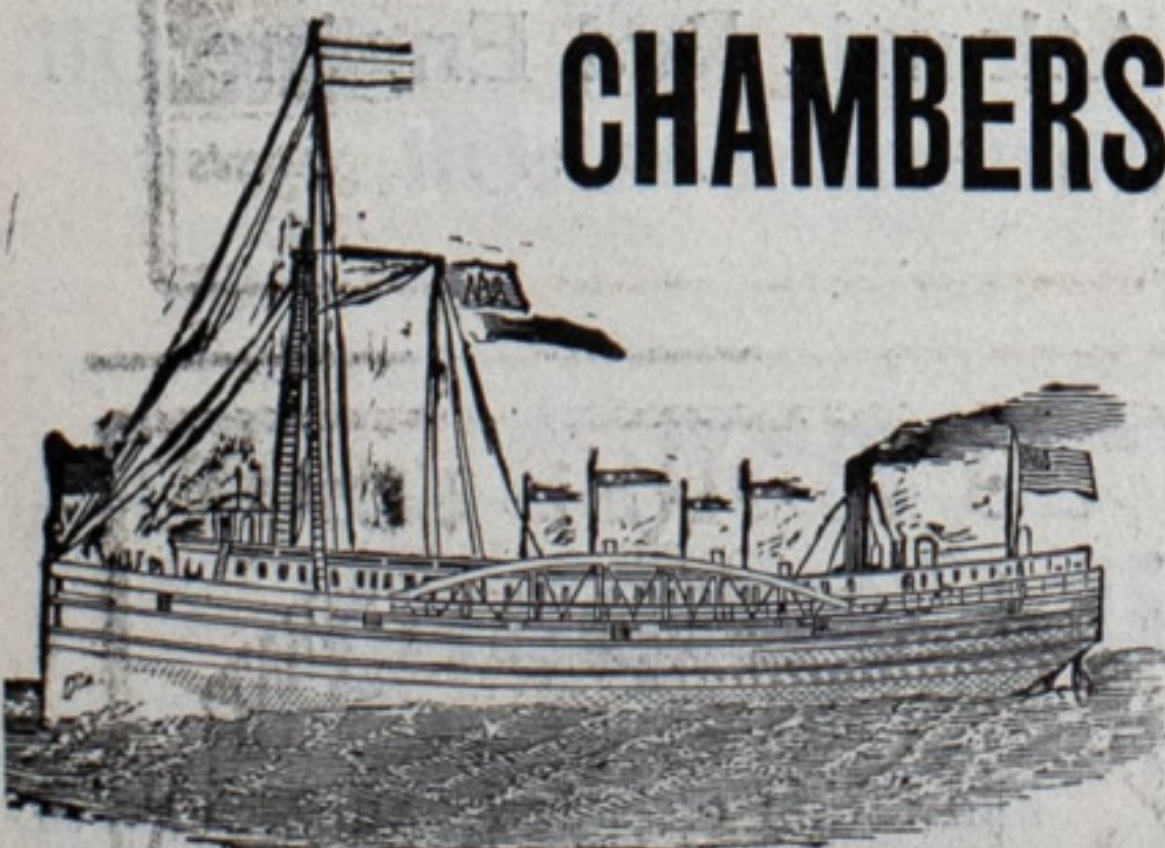
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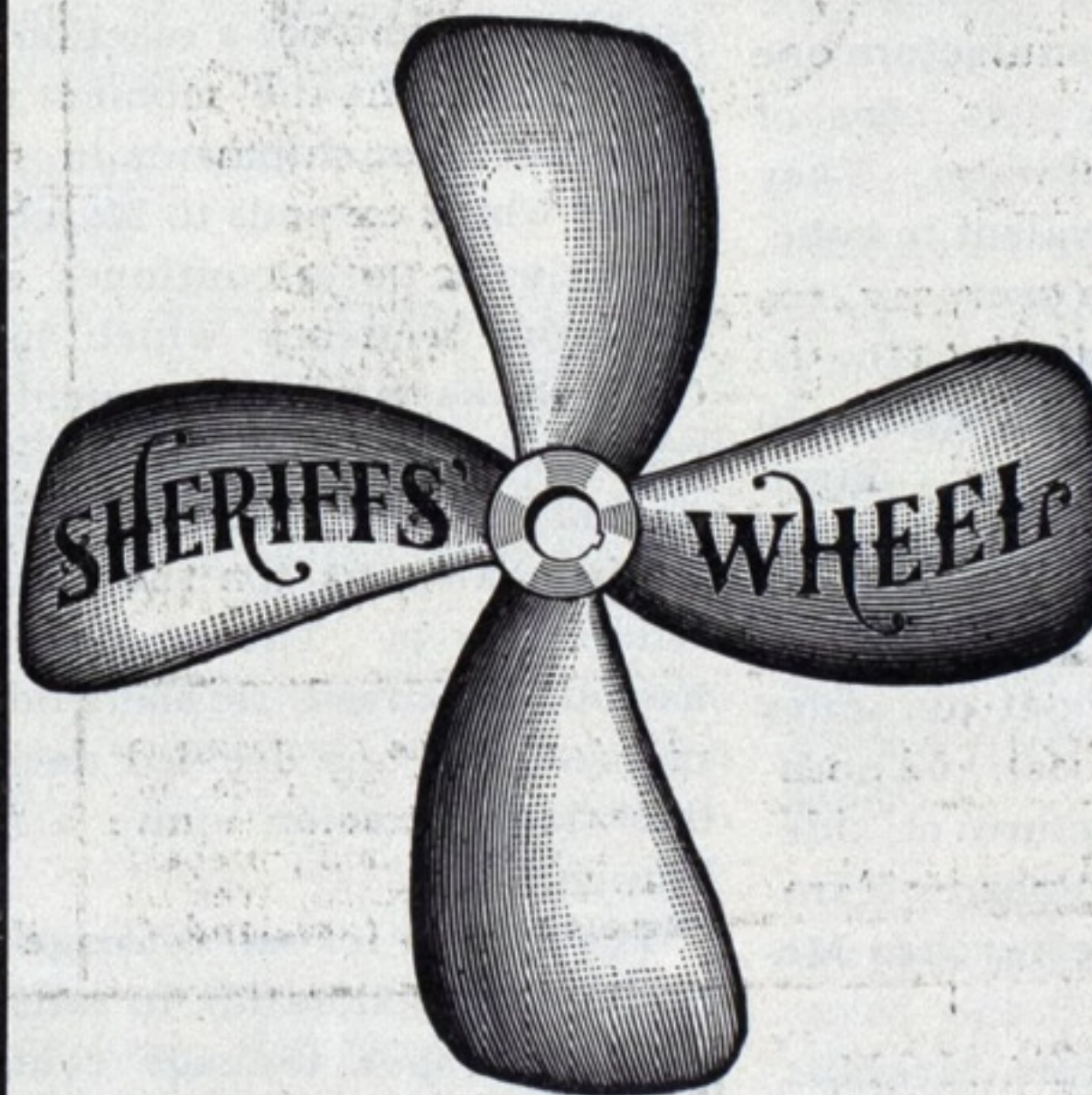
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Effective Sunday, November 25th, the fol-
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Valley Junction 7:15 a. m. instead of 7:25 a.
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For Pittsburgh, Washington, Baltimore,
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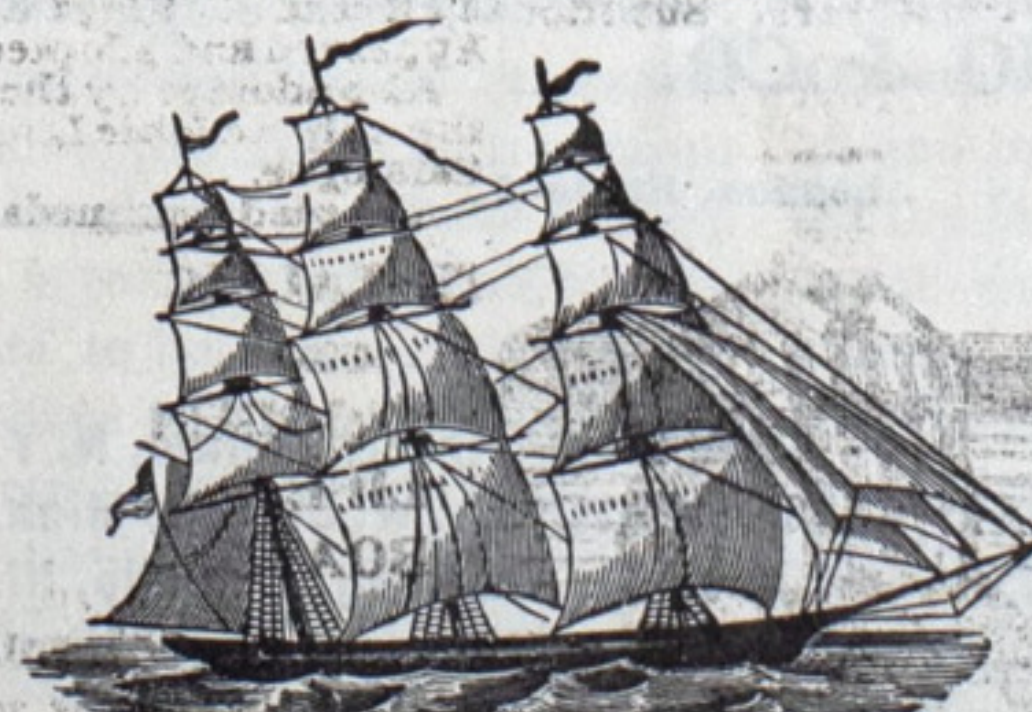
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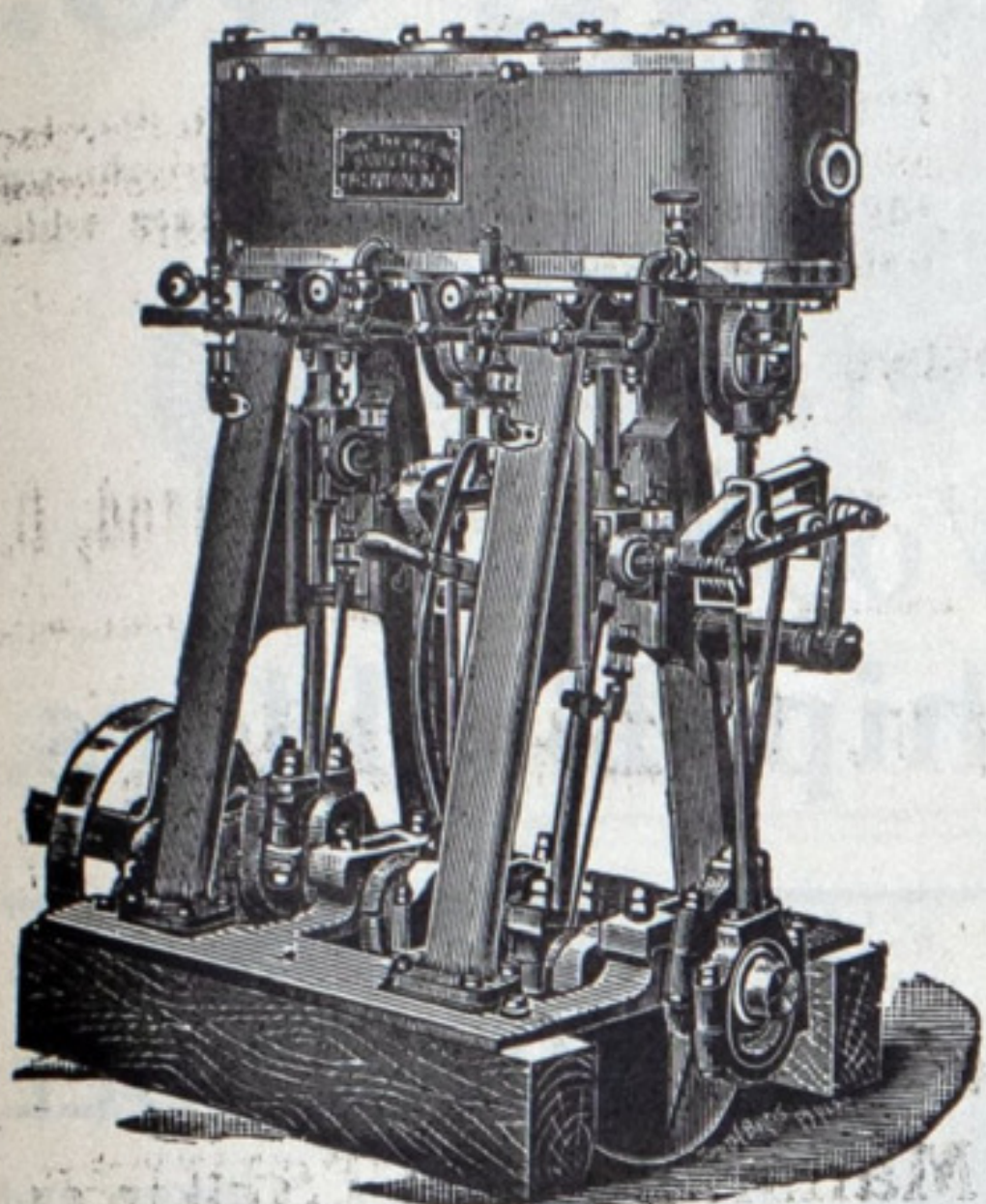
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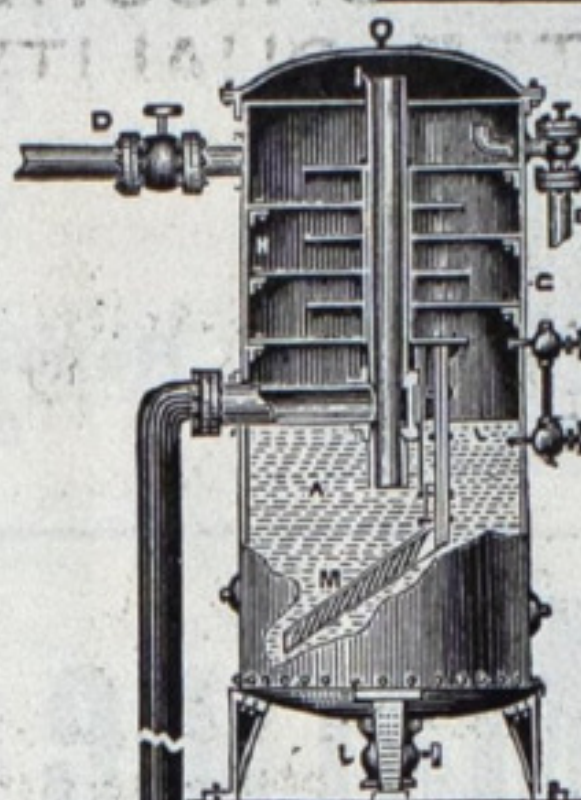
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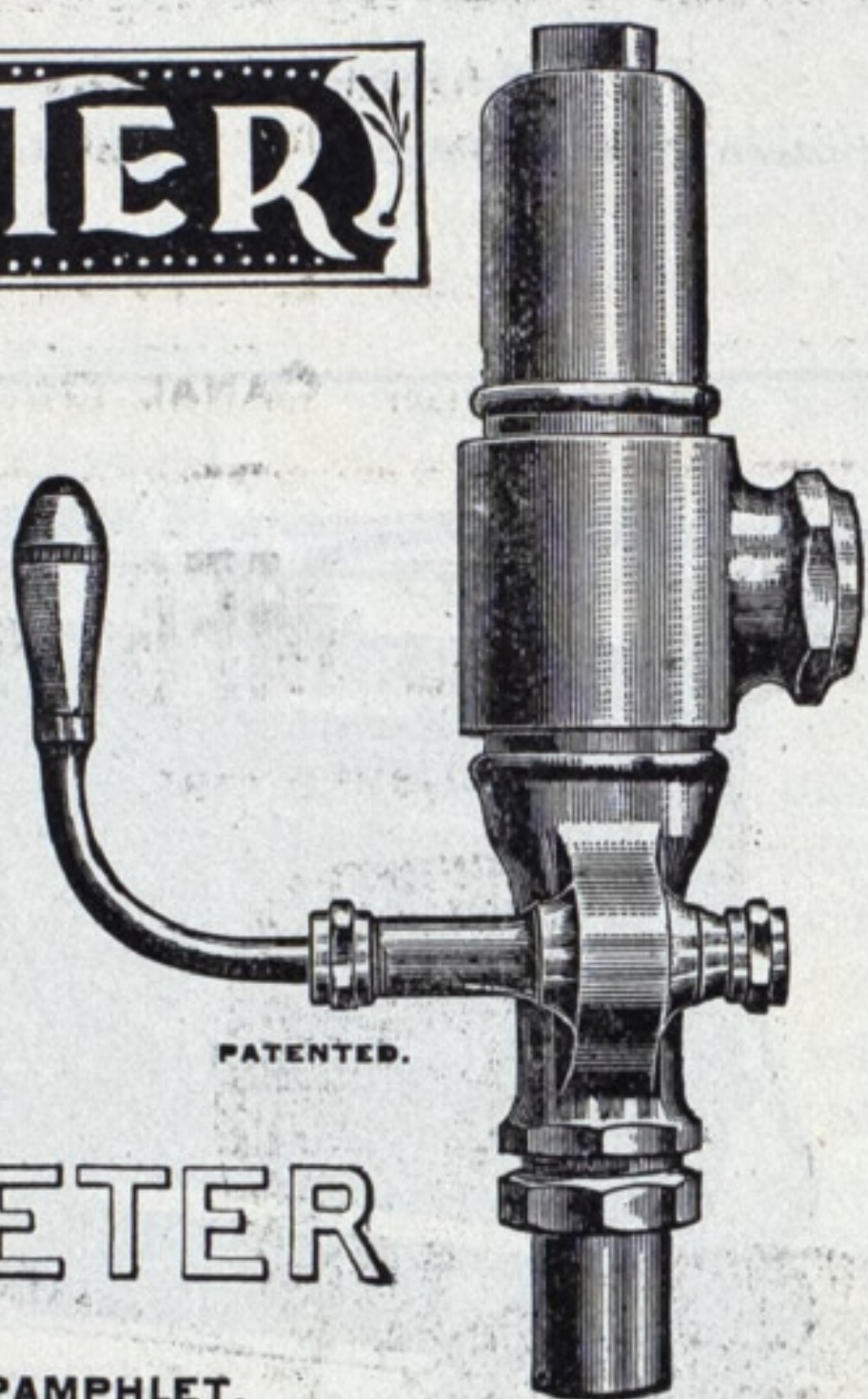
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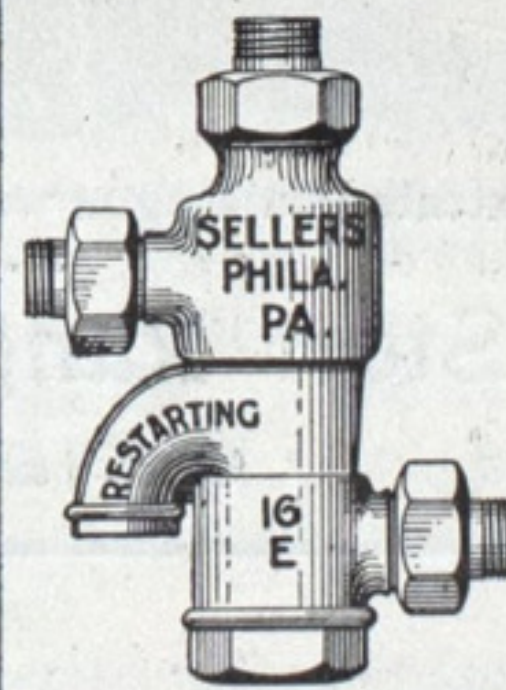


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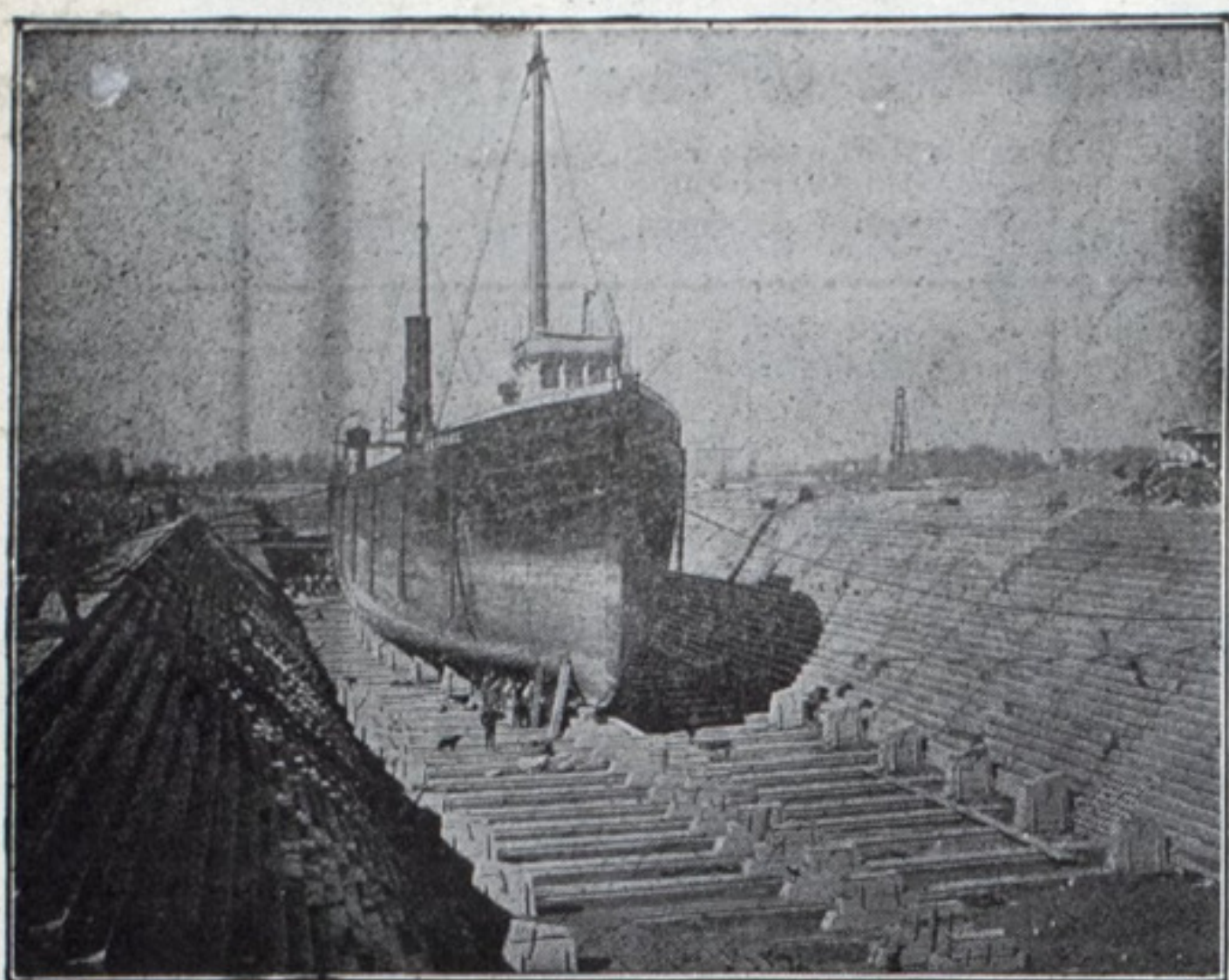
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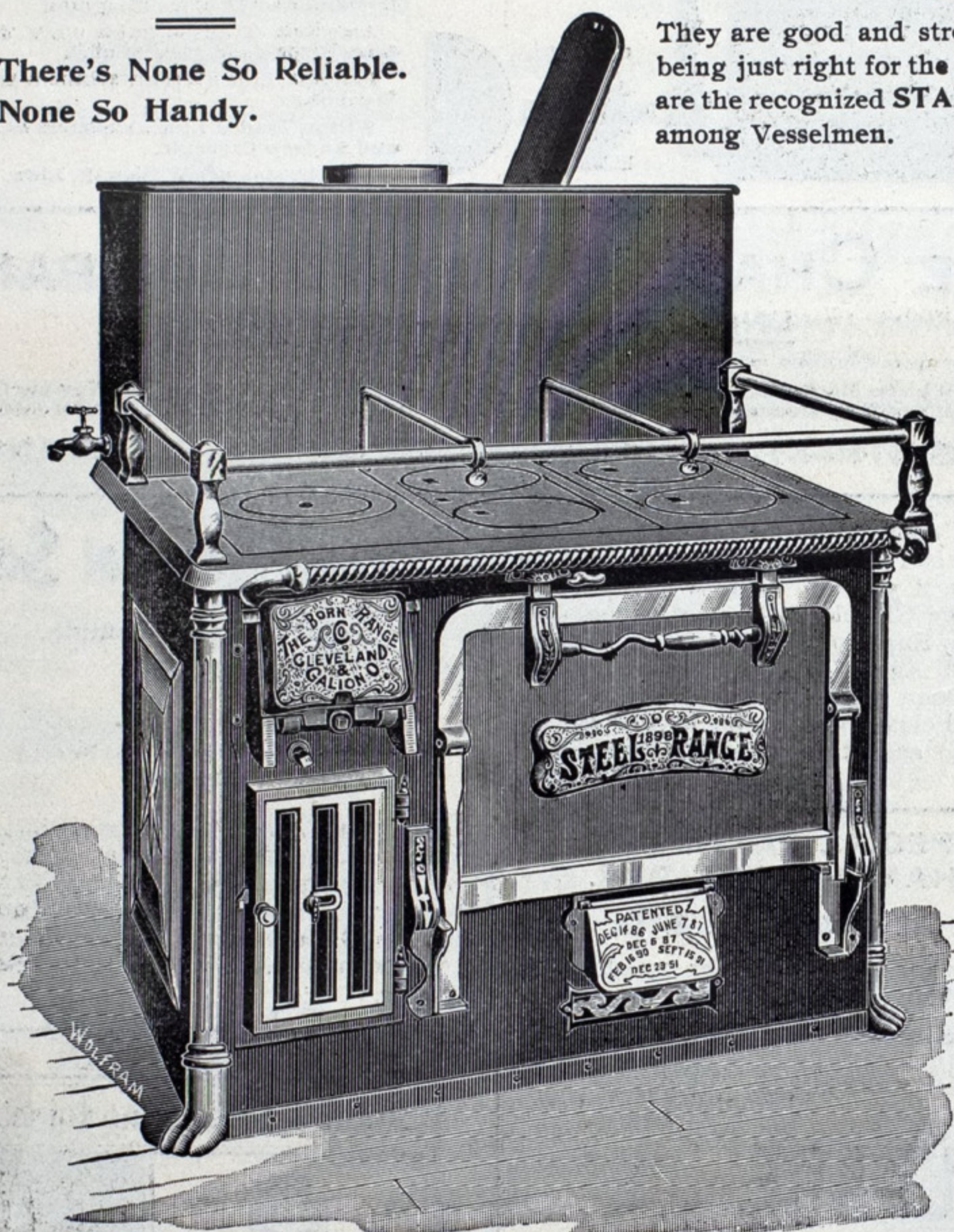
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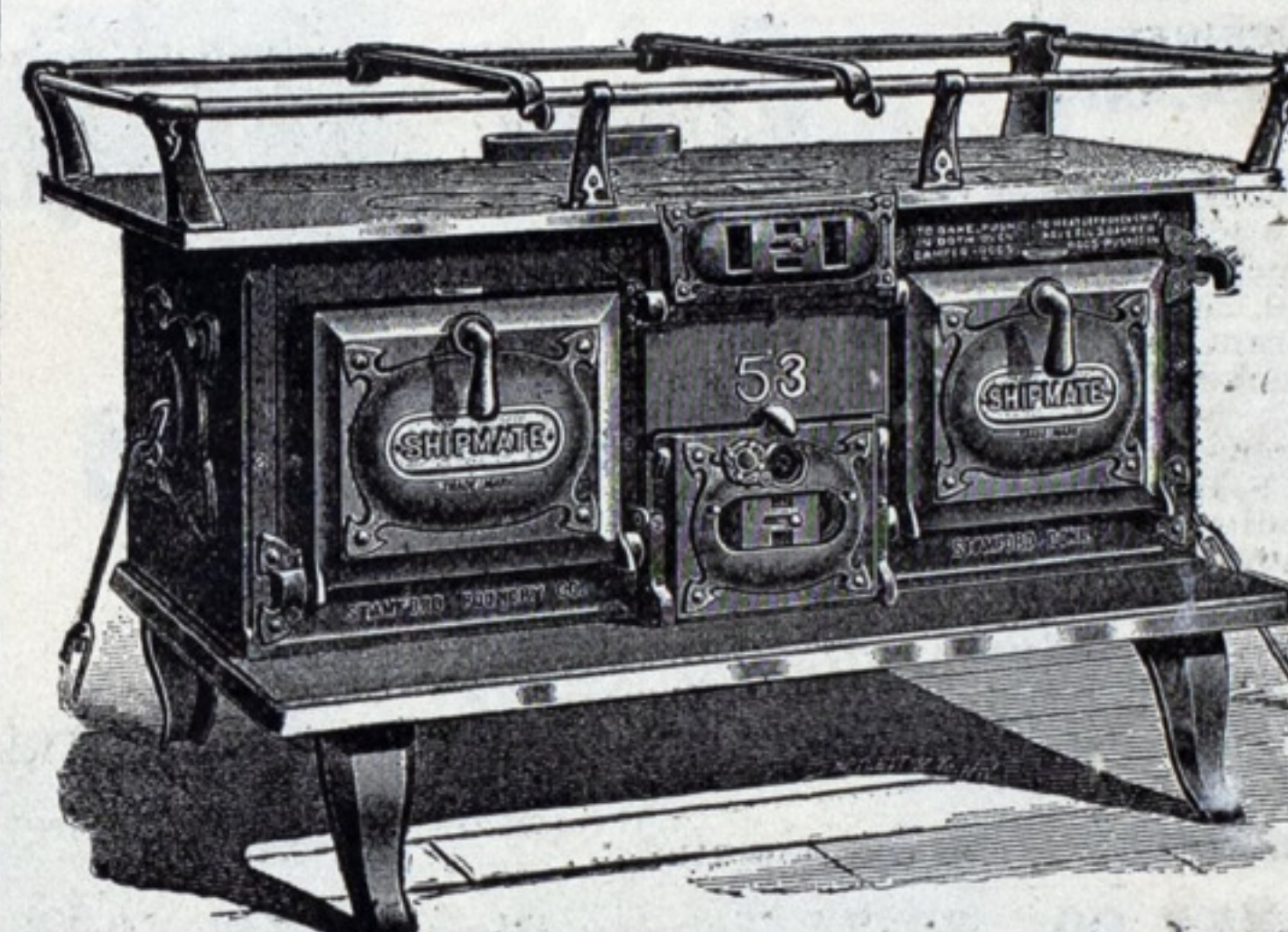


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